Crashing airplanes? Failing pacemakers? Year 2000 myths debunked. In Depth, page 77

Users are pleased with what they get in desktop management suites, but they want better NT support. Buyer's Guide, page 71

COMPUTERWORLD

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Ditching the commute

▸ *Workers head home; firms fight fears, build policies*

By Kim Girard

SYSTEMS ANALYST Cathy Lau was a pioneer at Pacific Bell when she began telecommuting in 1987 — alone in her home office and feeling somewhat misunderstood.

"In the beginning, people were wondering if I was doing anything at home," said Lau, who works from home several days a week to eliminate her 90-minute commute. "I had to write down what I was doing and what I accomplished."

A decade later, most of Lau's colleagues in information systems now telecommute several days a week. They are supported by time-tracking software, teleconferencing, call forwarding, a company-provided PC and remote connections.

But change is happening at a glacial pace within much of corporate America — particularly at older, more established firms.

Nonetheless, the number of homebound workers has swelled 15% in the past two

Telecommuting, page 16

Time Warner's Vicki Ziliotis

By Sharon Machlis and Mitch Wagner Consumers are **scared stiff** of sending their credit-card **numbers** across the **'net** to vendors like Time Warner. But elite hackers and security specialists do it **without worry.** Why? Because the public is mesmerized by **media reports** of Web attacks, focusing on a threat unlikely to affect them and ignoring the **real danger.**

E-commerce, page 28

'net discounts cut business costs

By Sharon Machlis

A GROWING NUMBER of Internet-only pricing deals are popping up in cyberspace.

Whether to entice customers to bypass costly humans when placing orders, respond to competition or simply test the waters, more companies are offering discounts over the World Wide Web.

If you want to fly from Seattle to Boise, Idaho, for example, Southwest Airlines offers a $54 fare. But it costs $29 if you order from the airline's Web site.

'net discounts, page 116

Insurers plan limitations on Y2K coverage

By Robert L. Scheier and Patrick Thibodeau

IF YOU THINK insurance will protect your company from the costs of year 2000 software bugs, think again.

Some insurers are quietly preparing changes to general property and liability policies to make it impossible for customers to collect year 2000 damages, such as sales lost by an automaker if a supplier can't ship parts because of a year 2000 glitch.

YEAR 2000

For IS managers charged with protecting their employers from year 2000 problems, "the plan can't be to buy insurance," said Steven Brower, an attorney at Ginsburg, Stephan, Oringher & Richman in Costa Mesa, Calif. "The plan must be to solve the problem."

Customers who assume that existing policies provide year 2000 coverage would be well-advised to check again. "Insurance companies don't want to

Insurers, page 116

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SPECIAL REPORT

IS salaries head into stratosphere

28% pay hikes for CIOs, and 10% increases for nearly a dozen other high-tech jobs. That's what **Computerworld's Annual Salary Survey** reveals: one wild pay ride (Managing, page 62). Our IT Careers section explores new business/technology jobs where IS professionals are going for the gold (page 79).

UP FRONT

Fun with TCO

There's been a lot of talk about total cost of ownership (TCO) lately, but I think it's been way too focused on computers. With this being Labor Day and everyone focused on those important people costs, I thought I'd see how some of the TCO metrics hold up in real life.

I picked my coffee pot.

The results will shock you. The TCO of coffee is totally out of control.

I'm a six-cup-per-day coffee addict. So I broke down my workload: It takes me six minutes to grind the beans and make a pot of coffee first thing in the morning. Two refills are four minutes each (there's a flight of stairs involved). Add two minutes looking for a misplaced coffee cup. At 16 minutes per day times about 285 home days per year, I will spend 76 hours in 1997 on coffee.

At work, I drink three cups daily at roughly three minutes each. Add two minutes rummaging through the refrigerator searching for half-and-half. Weekly cup cleaning adds three minutes. That's about an hour per week times 32 weeks in the office.

The TCO of coffee is way out of whack.

A pound of coffee a month adds $72 per year. If I replace the coffeemaker biennially, kick in $7.

Figuring a reasonable $40 per hour for my time, my annual cost of ownership of coffee comes out to $4,399, or $12.05 per day. Equally striking, the cost of the hardware (the pot) and software (the beans) is less than 0.4% of the total. It's the 108 hours of annual hidden labor costs that kill me.

The good news is that the TCO of most consumer items isn't nearly as bad as it is for coffee. When you calculate time and cleaning charges, for example, each dress shirt costs me a modest $8 per year to wear. The cost of spilling coffee on the shirt? I don't want to think about it.

Clearly, the TCO of coffee is way out of whack. I think it's time for the coffee industry to address this outrageous expense. Or maybe I'll just switch to tea.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE
BY RICH TENNANT

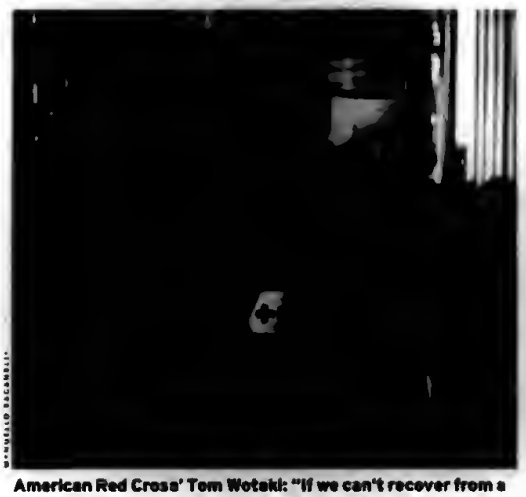
"I logged onto a dog grooming site an hour ago, and he's been having a staring contest with the home page ever since."

E-mail Rich Tennant at thefywave@tiac.net

Red Cross unclogs IS arteries

▸ *Agency streamlines blood collection system*

By Tim Ouellette



American Red Cross' Tom Woteki: "If we can't recover from a disaster quickly, we could jeopardize someone waiting for a [blood] transfusion"

FOR YEARS, the American Red Cross' blood collection network was as complex as the human circulatory system.

But now, the nonprofit organization is well on its way toward streamlining its information systems operations, promising hospitals and patients the most reliable blood network possible.

"From a business standpoint — and blood collection is a $1 billion business here — we needed to standardize on one platform because the Red Cross operates [its blood collection] under only one license from the [Federal Drug Administration]," said Tom Woteki, chief information officer at the Red Cross.

The project will reap cost and management savings, but Woteki said the higher aim is to streamline the collection system and increase productivity.

DIFFERENT SYSTEMS

Just three years ago, the 38 different blood collection regions were operating on 28 different computer platforms, all with different procedures. That number today is down to eight and will be whittled to one by December 1998.

The Red Cross uses a second data center in Philadelphia as a disaster-recovery site for its primary Falls Church, Va., center. It uses data replication technology from EMC Corp. Three other data centers will be closed in the process.

"If we can't recover from a disaster quickly, we could jeopardize someone waiting for a transfusion," Woteki said.

Nearly 3,000 hospitals depend on the 6 million units of blood the Red Cross gathers and distributes annually — nearly half the blood supply in the U.S.

The better tracking and tight coordination gained from the project will provide relief for patients concerned about the quality of blood supplies and the spread of disease. And soon, volunteers and hospitals could get better access to blood data.

Regions will standardize on the National Biomedical Computer System running on IBM RS/6000s. Those will be connected over a frame-relay network with Cisco Systems, Inc. routers and a Cabletron Systems, Inc. hub, with data stored on EMC Symmetrix disk arrays. So far, 14 regions have completely moved to the new system.

For a nonprofit organization, the idea of creating an entire new wide-area network, consolidating data centers and centralizing storage on high-performance and high-cost disk arrays can be daunting from a budget standpoint.

But the combination of strong management backing at the Red Cross and the potential costs savings and productivity gains from centralization made the move attractive, Woteki said.

For example, a central storage manager can cost half as much in total support costs as a storage manager in a distributed office, while managing seven and a half times as much data, according to research by International Data Corp. in Framingham, Mass.

The move also could remove duplicate programming efforts and lower training costs across the Red Cross' 15,000-strong blood collection organization.

And disaster recovery will be better organized than when each region was left to its own devices. The old practice could limit the chances for different regions with supplies of rare blood to get them to disaster locations quickly.

Now, the Red Cross is testing an optional tool on EMC's disk arrays, called Symmetrix Remote Data Facility, which moves data to remote Symmetrix arrays in Philadelphia at data-channel speeds.

"This pushes the replication down to the hardware level, so we solve a problem that before we were trying to solve with software," Woteki noted. □

resource links

Year 2000

A brand new, exhaustive list of everything you need to know to solve the year 2000 problem — stories, white papers, links to vendors and product listings.

www.computerworld.com/year2000/

COMPUTERWORLD

IBM rolls with Workspace extension

▸ *Adds support for Java, PC capabilities*

By Gordon Mah Ung

IBM PROMISED to move its OS/2 Warp Server closer to the Internet and to the network-centric computing model with the announcement of the WorkSpace On-Demand operating system extension.

The extension, previously code-named Bluebird, is due in November. It adds support for Java, thin clients and managed PC capabilities to Warp Server.

CUSTOMIZED PROFILES

By running the operating system and most applications on the server, then "rippling" images of the applications to clients — similar to the way Unix servers use X Window System technology to display applications running on the server — WorkSpace On-Demand centralizes configuration and control. That gives information systems managers the power to set up customized profiles for each user, IBM said.

In the banking industry, where OS/2 has been the strongest, several users said WorkSpace On-Demand sounds promising.

"It's almost too good to be true," said David Knight, assistant vice president and manager of client/server at Trustmark National Bank in Jackson, Miss. "Being able to customize desktops the way we want to, it's going to make it much easier to train users and much easier to support if it works like they say."

Users who log in to WorkSpace On-Demand from any machine will be able to choose from many interface options, including a browser, OS/2 or 3270 screen.

"Being able to customize desktops the way we want to, it's going to make it much easier to train users and much easier to support if it works like they say."
– David Knight, Trustmark National Bank

OS/2 ISSUES

Although pleased with OS/2, Knight said he has issues with the current incarnation: lack of support for Java and 32-bit Windows applications.

WorkSpace On-Demand has a Java Virtual Machine built in to the operating system. Users can support 32-bit Windows 95 and NT applications with third-party software such as WinFrame from Citrix Systems, Inc. in Fort Lauderdale, Fla. WorkSpace On-Demand supports 16-bit Windows applications, DOS and 3270 emulation.

"If those two hurdles are passed — Java and 32-bit Windows — then you're looking at a client that can do anything," Knight said.

Jeffrey Bogue, vice president and manager of technical services at Capitol Federal Savings and Loan in Topeka, Kan., said he is excited about the possibilities.

"My major interest is in administration and being able to deliver applications dynamically to the desktop without touching each machine," Bogue said.

IBM said WorkSpace On-Demand will cost $729 per shrink-wrapped copy. Customers who spend more than $500,000 on WorkSpace On-Demand are eligible for support from the IBM Rapid Deployment Team or free defect support for a year. □

Cabletron users share switched connections

By Bob Wallace

CABLETRON SYSTEMS, INC. users who can't afford switched connections to the desktop will be able to get some of the benefits of high-bandwidth connections at lower cost.

MicroLAN products, announced last week, let users in a workgroup share a 10M bit/sec. Ethernet pipe, as does any other hub. But they connect one network segment to another using a separate connection that is dedicated to moving network traffic from one segment to another. That gives much faster access to printers, servers and colleagues in other workgroups.

The products also reduce the average number of users sharing a 10M bit/sec. Ethernet pipe from 75 to 100 stations to a maximum of 12.

Most vendors offer this capability on their high-end data center switches.

The MicroLAN products will supersede the 120,000 MMAC hubs that Cabletron has shipped since the 1980s. The Rochester, N.H., vendor will continue to build and service the MMACs but expects users to eventually migrate to the new wares.

"It's a step between shared and switched for users, a best of both worlds," said Skip MacAskill, an analyst at Gartner Group, Inc. in Stamford, Conn.

"We have a department that doesn't have funding for LAN switches and is very interested in the MicroLAN products," said Jim Gogan, director of networking and communications at the University of North Carolina at Chapel Hill.

PRODUCT MODELS

Cabletron offers the product in two stand-alone switch models. The MicroLAN 2110 costs $5,495 and is shipping now. It connects 48 users using shared Fast Ethernet. The 2100 supports up to 48 Ethernet connections and will ship in 90 days for $8,495.

A Fast Ethernet MicroLAN module for Cabletron's SmartSwitch 6000, a midrange switch, will be available in 90 days for $9,995. The Ethernet MicroLAN module for SmartSwitch 2000 costs $5,995 and is available now. □

Gigabit Ethernet holds performance promise but isn't mature. Page 49

IBM's Visual Age tool extends Java support

By Sharon Gaudin

IBM IS EXPANDING its Java support with the release of the Enterprise Edition of its VisualAge for Java development tool.

The latest edition, which started shipping last week, was designed to help developers build server-side business applications.

An upgrade from the VisualAge for Java Professional Edition, the enterprise version includes Enterprise Access Builder, a rapid application development tool. It can automatically build World Wide Web server applications that can access database information through CICS and send it over the Internet.

"The Enterprise Access Builder is a really slick tool," said Dennis Kremer, a programmer at RPS, Inc., a package shipping company in Pittsburgh. "It writes 99% of the database code for you, and that's real tedious stuff to do. This is a real productivity gain for us."

PERFORMANCE UPGRADES

Kremer used the beta version of the tool and now has officially adopted it. He said he gave it the company's support despite having to upgrade the memory on his machines from 64M bytes to 128M bytes to get the necessary speed and performance.

The Enterprise Edition also offers the same team environment available with VisualAge for Smalltalk.

The fourth generation of IBM's VisualAge for Java family, E-Business Edition, is due in the fourth quarter of this year, according to Scott Hebner, manager of application development marketing programs at IBM. □

Corporate Strategist

AS a CIO for the past two decades, Charlie Feld has done it all — from tracking Frito-Lay potato chip sales to seeing that the Burlington Northern and Sante Fe Railway trains run full of freight. Now, from his Texas ranch, Feld is launching a new IS career: leadership evangelist. "What we want to do is obliterate the traditional IS model of boom, bust, boom, bust, where organizations throw a lot of technology at something, then it goes blank and has to be written off," Feld said.

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Jim Longo's research company uses a storage vendor to host its Web site. Servers & PCs, page 59

Don Gilmor explains how Microsoft is hijacking and derailing the Java Express. Commentary, page 117

Groupware helps Chase's John McFadden identify key customers. The Enterprise Network, page 49

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Cops wield database in war on street gangs

▸ *Who needs guns when you've got query tools?*

By Patrick Thibodeau

IN THE CITY of Angels, gangs like to keep score.

Gang killers often will shout out the name of their gang after shooting someone so people know who killed whom. That's one clue for the Los Angeles County Sheriff's Department.

A witness may notice a tattoo on the killer's left arm. Another clue.

Those pieces of information — along with details of colored bandannas, types of weapons and vehicle descriptions — will become the basis of a query in the county's gang database, which attempts to match the clues with names.

"Officers on the street need data right now; they don't need it next week."
– Don Mace, CAL/GANG administrator

Using the decade-old database, Los Angeles tracks the activities of about 150,000 people in 1,350 gangs, whose crimes included about 600 murders last year. It soon will link to other gang databases in California.

MORE ARRESTS

Although he can't put a number on it, Sgt. Wes McBride of the Los Angeles County Sheriff's Department said the gang database has improved the arrest rate "by the bucket-loads."

The new effort, called CAL/GANG, will solve a major information-sharing problem and create what may be the largest gang database in the nation, with more than 200,000 names.

"Officers on the street need data right now; they don't need it next week," said Don Mace, CAL/GANG project administrator at the California Department of Justice in Sacramento. "They also need a way of looking at the data [in] real time, as opposed to calling somebody on the phone to run the data for them — and this system will do it."

Under the $805,000 project, the state is using Windows NT World Wide Web servers to link seven regional gang databases into one intranet.

Investigators will dial in over telephone lines and browse text, pictures and even video contained in the Microsoft Corp. SQL Server database.

Digital certificates, along with a password and user identification, will authenticate users, Mace said.

Although gangs are increasingly mobile, methods for sharing information about them are fragmented and often confined to specific regions — if they exist at all, said officials involved in gang-tracking efforts. California isn't alone in trying to change that.

In May, President Clinton called for a National Gang Tracking Network as part of an overall effort to battle youth violence. A $424,000 pilot project is now under way in New York, Connecticut, Rhode Island, Massachusetts and Vermont, using Lotus Notes with a database that can be replicated as often as users need an update.

McBride, a gang investigator for 23 of his 31 years at the Los Angeles County Sheriff's Department, has watched gangs move from the neighborhood onto the interstate.

And in New York last week, police arrested dozens of people who had established "franchises" with Los Angeles-based youth gangs called the Bloods and the Crips, said Mary Debourbon, a spokeswoman at the Queens district attorney's office. The arrests represented the first public acknowledgement of the arrival of the West Coast gangs in Queens, she said. □

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For this and other related links, point your browser at *http://www.computerworld.com/links/97090copslinks.html*

– A report prepared by the Office of Law Enforcement Technology Commercialization *http://iridium.nttc.edu/law/gangtrack.html*

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Cops wield database in war on street gangs

▶ *Who needs guns when you've got query tools?*

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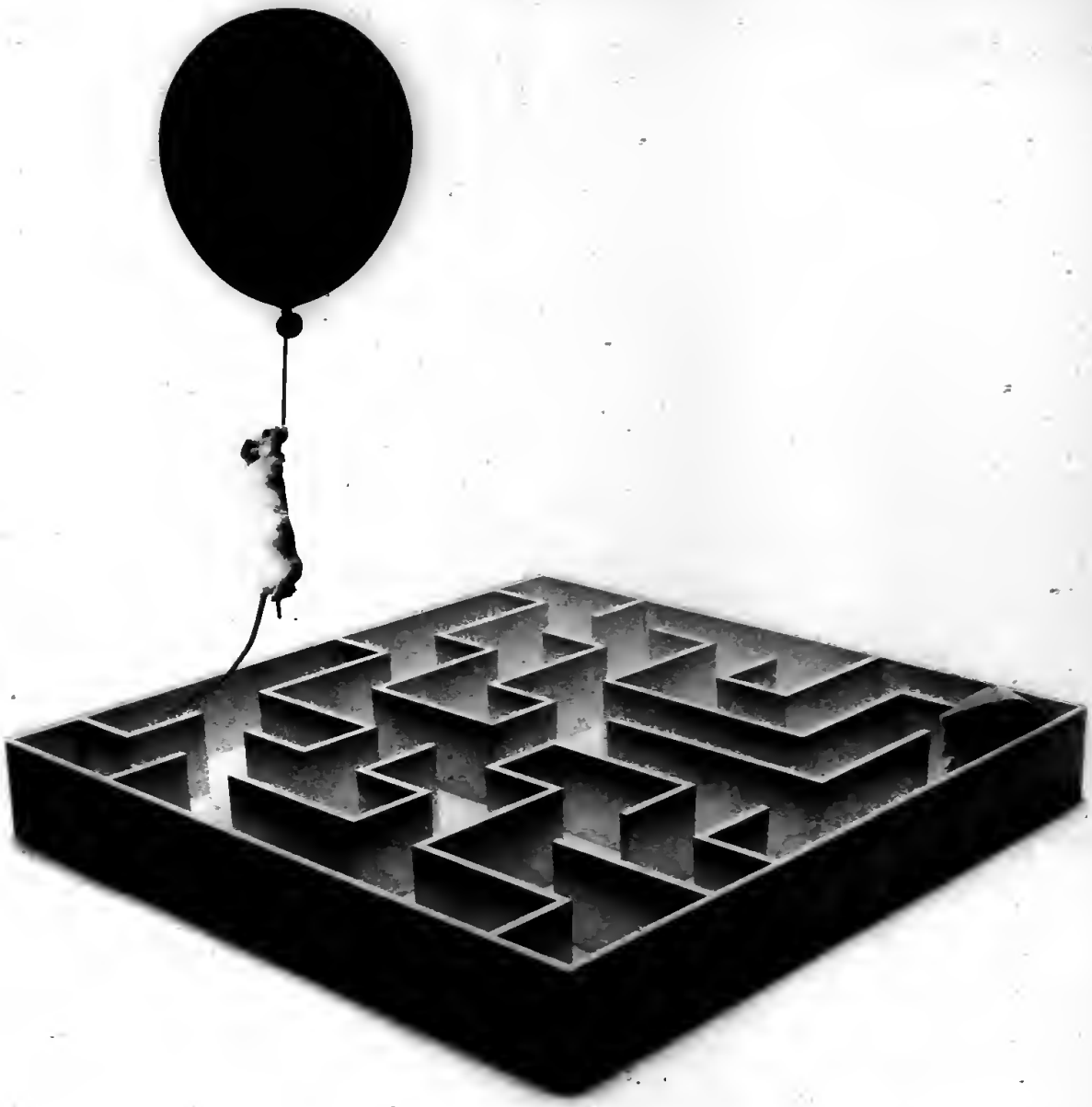

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JAVA INTERNET BUSINESS EXPO

Java moves over to server-side applications

By Sharon Gaudin
New York

JAVA HAS spread like wildfire through the dynamic world of the Internet, but now the sparks are fueling more complex, business-critical applications.

Despite critics' warnings that Java is still immature when compared with its predecessors, C++ and Cobol, the ranks of developers writing server-side Java applications are swelling.

"We're about to change some of our C++ applications on the server to Java applications," said Brian McGuire, director of Internet administration at Econometrics, Inc., a Chicago-based market research company that started using Java last year.

"I'm pretty confident in Java," said McGuire, who is an IBM customer. "Look at it a year ago, and look at it now. It's a lot more powerful, and it's faster than it used to be. And it's only going to get faster. I think in a year it'll be as powerful as C++."

Sun has its shoulder solidly behind the push to move Java applications beyond the desktop and onto more powerful servers. Because Java built its fame on being platform-independent, analysts said it needs to focus on servers, where the variety of platforms includes everything from Unix boxes to IBM AS/400s and Windows NT machines.

The vendor last week announced its Enterprise Java plan at the Java Internet Business Expo, releasing specifications that enable independent software vendors and developers to build Java-based, business-logic components for servers.

Mountain View, Calif.-based Sun also announced Java Blend, a middleware product that enables database access from Java applications (see related story, page 53).

Sun's Java comrade, IBM, announced it is shipping the Enterprise Edition of its VisualAge for Java tool (see related story, page 3). That edition will automatically build Java-based World Wide Web server applications that can access information stored on a variety of databases.

And to top off their enterprise push, Sun and IBM joined forces with Netscape Communications Corp. to speed the integration of new Java releases into browsers and applications. The companies have created a tuning center that will be based in Cupertino, Calif., and staffed with 100 engineers from the three companies.

The focus will be to speed Java enhancements into the marketplace by enabling simultaneous shipments of all new Java releases by all member companies who take part in the tuning center.

Currently, it takes six to eight months to get enhancements from Java updates integrated into products such as Netscape's Navigator.

Red Storm's Kevin Perry built the company's latest game with Java. "We will build our other games with it."

STEVE ROSS

SUCCESSFUL TEST

RPS, Inc., a 10,000-employee shipping company in Pittsburgh, has used Java for six months and has just built two three-tier applications with it.

"We expect huge gains from using Java," said RPS programmer Dennis Kremer, who uses IBM tools. "So far so good. We really wanted to test it out and see what we could do with it, and we haven't had any problems using Java on the server side. That's great news for us."

Kremer used Java to build his Transportation Management System, a three-tier application that tracks the company's trucks across the country. He also built a Java-based Executive Information System, a querying application that helps RPS track package volume and on-time service.

JAVA PROGRESS

Kevin Perry, a producer at Raleigh, N.C.-based Red Storm Entertainment, author Tom Clancy's online gaming company, said he is encouraged by Java's progress. He wanted to test Java, so he built the company's latest game, Politika, entirely in Java.

"We wanted to find out if Java could handle it, and it can. We have the test to prove it," Perry said. "Politika is hugely important for us. If we hadn't thought Java was ready, we wouldn't have gone with it. Now that this is working, we will build our other games with it." □

Users: JavaStation needs revving up

▶ *Lack of terminal emulator cited*

By April Jacobs
New York

ALTHOUGH JAVA appears to be taking hold as an application development platform, users and analysts say the JavaStation — Sun's network computer — isn't ready for widespread deployment yet.

STEVE ROSS

That was the word from some who attended the Java Internet Business Expo last week in New York, where Sun Microsystems, Inc. trotted out several companies that use Java to build business applications.

JavaStation is still slower than a PC when it comes to running Java applications, and its ability to access non-Java applications is too limited, said Audrey Apfel, an analyst at Gartner Group, Inc. in Stamford, Conn. "There just isn't enough of a compelling reason to have a JavaStation at this point," she said.

The slower performance of JavaStations is a problem, according to officials at Mountain View, Calif.-based Sun. PCs have a compiler that will let them speed up Java performance when running Windows. That speed issue will be addressed when Sun releases its own compiler later this fall, said Steve Tirado, a product manager at Sun's Java Systems business.

Another shortcoming users cited was the JavaStation's lack of a terminal emulator; competitors such as IBM have preloaded their network computers with terminal emulators.

FREE LICENSE

Sun does provide an eight-user license free with its NetraJ server software package, which it sells with JavaStation.

But terminal emulation comes from a third party, and users have to pay for additional licenses.

Potential end users said they are optimistic about network devices, but they are ready for large rollouts only as replacements for dumb terminals.

"We're considering [network computers], among them the JavaStation. But we would have to redo our internal applications first and put a Java front end on them," said Win Cody, a senior vice president at The Copeland Cos., a subsidiary of The Travelers in New York.

The JavaStation, like its other network computer counterparts, harnesses most of its power from the server but can run applets locally — making it a simple device to manage and maintain.

SOME OPTIMISM

For Java enthusiasts such as Tripp Johnson, manager of new technology at First Tennessee Bank in Memphis, there is some cautious optimism about JavaStations.

Johnson says he would consider Sun's network computer to replace terminals for First Tennessee tellers.

But he said he worries about the learning curve that some workers will experience with a new interface. He also is concerned about the time it would take to develop a Java-based front end for his company's applications.

"We are looking at JavaStations for kiosks throughout the company, as a way for employees who don't have PCs on their desktops to do their banking," he said. "But this is a limited-use application. I don't see them as replacing PCs for a good while."

STEVE ROSS

JavaStation is limited by its narrow focus, Apfel said, but additional access to Windows applications is due this fall.

Also in the next quarter, Citrix Systems, Inc. is expected to deliver client software that will let JavaStation run Windows from a server.

Yet some users, citing a lower cost of ownership and simplified hardware, said JavaStation already is a good choice.

"I don't want to have to buy 3,000 PCs to replace dumb terminals," said Dwayne Burberry, director of information systems at Arch Communications Group, Inc. in Westboro, Mass. □

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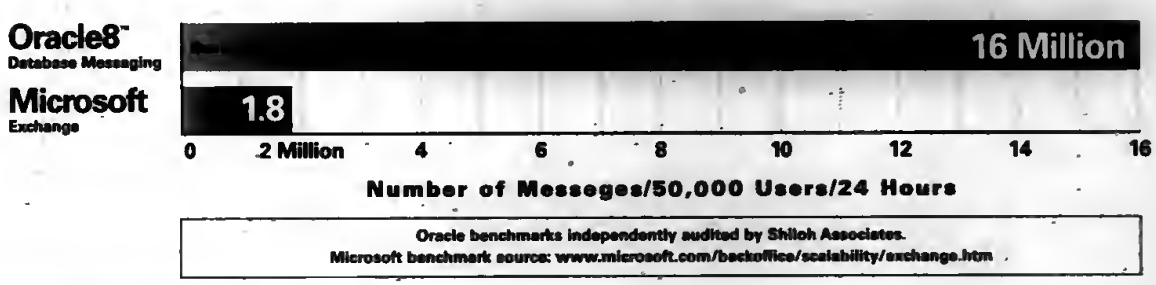

Oracle benchmarks independently audited by Shiloh Associates.
Microsoft benchmark source: www.microsoft.com/backoffice/scalability/exchange.htm

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FRANKLY SPEAKING

Don't let the Web pass you by

FRANK HAYES

REMEMBER ALL the battles you had to fight a few years ago to get control of your users' PCs? You're about to fight them again ... in spades.

That's because plenty of business units want their Web sites under the control of just about anyone except the IS department.

Case in point: According to *Catalog Age* magazine, only 6% of catalog retailers have their IS departments manage their Web sites.

Who gets the nod instead? At 57% of catalogers, it's the marketing department. Another 25% put the Web site in the hands of another non-IS department, and 12% go to someone outside the company, according to survey results published in the magazine's Sept. 1 issue.

Those companies aren't naive about the importance of the Internet. They aren't naive about using IT for business advantage, either — catalogers are almost fanatical in their quest to track who buys what from them, then target those customers for future purchases.

In other words, catalogers know Web site building is a business-critical, computer-oriented function. It has the potential to become a crucial source of business in the next few years. Despite all that, IS professionals have been cut out of the loop at more than 80% of these companies.

With the Web, users have another chance to be free of those clueless dweebs in IS.

Why? The easy answer is that getting a Web site going simply doesn't require the technical expertise of IS. All anyone really needs to create a Web site is some shrink-wrapped software from Egghead. And putting that site on the Web merely requires the phone number of a full-service Internet service provider — that's straight out of the Yellow Pages.

That's the easy answer.

The ugly, unpleasant answer is that those users probably view IS as an inbred crew of cretins who shouldn't be let anywhere near a hot new opportunity such as the Internet.

That's harsh. But it's understandable.

After all, how fast could your IS shop set up a Web site? How quickly and easily could it be changed by users? How long would it take to set up secure online ordering? What's your turnaround time for adding animated graphics or Java applets?

PLAN OF ACTION

Most important, how many times would you say "no" because your business users' Internet ideas are inconvenient or unfamiliar or wouldn't fit your usage plans?

Users have faced slow, uncooperative IS people ever since you won the fight for control over PCs — the PCs that users bought out of departmental budgets because it took two years to get new software from IS and two days to buy it at a computer store. Now, with the Web, they've got a second chance to be free of those clueless dweebs in IS. And this time they won't give up so easily.

So what can you do?

First, make sure your IS shop knows its stuff when it comes to the Internet and the Web.

Then find out what your business units and departments are doing or planning on the Web, and offer to help.

Offer your users specific, discrete services — say, setting up secure transactions or putting together connections to your product databases.

Don't get mad when they say no. (Remember, they've been listening to you say no for years.) Court your users. Ask them what they need, build it on your own nickel and then offer them something better than they're getting from their commercial Internet providers — at a competitive price.

That's what it will take. And it won't be easy. Learning to really serve your users — to work as a partner, not an overlord — is a lot harder than just demanding control of their Web efforts.

But it's a lot easier than fighting the battle of the PC all over again. □

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes@cw.com.

SHORTS

Netscape to post bug fix

Netscape Communications Corp. this week plans to post a fix for a bug reported Aug. 19 by a student at the University of California at Santa Barbara. Similar to other recently uncovered bugs, the latest one lets a malicious World Wide Web site operator track a user's Web activities through a JavaScript command that issues a second tiny browser. The second browser lets the hacker potentially intercept sensitive information, such as credit-card numbers. A Netscape spokesman said the company could reproduce the bug only on the Win32 platform, but it will offer a fix for all platforms "to be on the safe side." The Navigator 4.x component of Communicator and the just-released stand-alone Navigator 4.02 browser also were affected.

Year 2000 hiring spikes up

As companies move forward on year 2000 work, the pace of hiring — and of wage increases — is picking up. A survey of 128 Fortune 500 companies conducted last month by New York-based consultancy Cap Gemini America showed that 60% plan to increase staffing for year 2000 work, up from 45% four months ago. Nearly a third expect salaries for year 2000 personnel to rise by more than 20% during the next year.

Sun, Netscape team on browser

Sun Microsystems, Inc. and Netscape Communications last week announced they will work together on a "100% Pure Java" Web browser. The browser will be written in Java to run on JavaStation network computers and other platforms. The two vendors also are working on a JavaBeans component that, when built in to an application, will let users browse a Hypertext Markup Language document without launching a separate browser.

Intel to ship notebook chip

Tillamook, Intel's much-anticipated Pentium MMX processor for portable computers, is due Sept. 8, the same week notebook makers are expected to announce new higher-power models. Tillamook will boost notebook speeds from 166 MHz to 233 MHz. It will be built on a circuit board with companion chips, enabling manufacturers to assemble and roll out new machines faster. IBM, Compaq Computer Corp. and Toshiba Corp. are among the vendors expected next month to unveil lines that use the chip.

Microstrategy ship date slips

Microstrategy, Inc. has pushed back the promised delivery of ActiveX-based versions of its data analysis client software from early next year to the middle of next year. The software, which will give Microstrategy's Windows and Web browser clients a common code base and feature set, is now tied to a planned upgrade of the company's DSS Server. That product is slated for delivery in either the second or third quarter of next year.

US Airways hires Sabre

US Airways Group, Inc. last week said it plans to outsource its information technology operations to Sabre Group. The 10-year-plus, multibillion-dollar deal is intended to reduce costs and improve operations such as scheduling and passenger check-in. Fort Worth, Texas-based Sabre, which is majority-owned by American Airlines parent AMR Corp., is expected to offer jobs to all 875 of US Airways' information technology staffers.

Digital/Intel suit rolls on

Digital Equipment Corp. last week asked the federal court that is hearing its patent infringement suit against Intel to keep Intel's countersuit out of the proceedings. Hearing the suit and countersuit at the same time would make the proceedings too complicated, argued Digital lawyers, who told the court Intel filed the countersuit only to harass Digital and confuse the issue.

Apple hits Mac clone users

Apple Computer, Inc. last week said it will stop offering discount software upgrades to Macintosh clone customers. That means clone owners will no longer be offered upgrades to the Mac OS at a $10 charge. The Mac OS sells for $99 retail. Apple's decision is part of an ongoing struggle with Macintosh clone manufacturers.

GAO: DOD plan is DOA

The Department of Defense's master plan to consolidate 17 electronic combat facilities will lead to less effective testing capabilities, while perhaps not maximizing savings, a General Accounting Office report charges. The reason: an "inability to overcome service parochialism," which would result in no consolidations between sites controlled by different military branches. The Defense Department disputed many of the report's findings.

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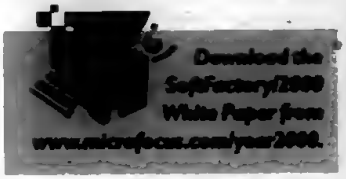

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Users want data mining tools to scale up

By Craig Stedman
Boston

DATA MINING may be the next frontier for companies with data warehouses, but many prospective users said the technology is still in the Wild West stage.

Data mining tools largely are unproven, especially at wading through huge pools of information, said a half-dozen users and consultants at The Data Warehousing Institute's summer conference here last week. Mining applications also often need much more stringent data preparation and cleansing than garden-variety analysis projects, they said.

As a result, some companies that are intrigued by the promise of data mining — essentially, that it can uncover hard-to-spot patterns and relationships in business data — are proceeding with caution.

"For us in marketing, the tools will not work on the volumes of data we have. They just don't scale up at all," said Paula Thornton, information architect for a 1-Tbyte sales and marketing warehouse at MCI Communications Corp.'s data center in Colorado Springs.

MCI statisticians now build predictive sales models manually. Data mining algorithms that automatically sift through customer records could help make that process more dynamic, Thornton said.

But first, MCI has to figure out how to slim down its data set to a workable sample of less than 500G bytes that will still yield valid results. That is proving tricky because data mining vendors have no well-defined guidelines, Thornton said.

GTE Corp.'s information systems unit in Temple Terrace, Fla., wants to give mining capabilities to marketing analysts by year's end. But many of the tools it is evaluating are beta-quality releases that may not be able to plumb its full 800G-byte marketing database, said Ed Powali, a senior systems engineer at GTE.

PITFALLS IN THE DATA MINE

- Business managers must understand the limits of data mining tools.
- Mining algorithms may not mesh with traditional statistical analysis.
- Accuracy of findings can't always be determined by statistical methods.
- Mining tools often need access to full sets of raw data.
- Data quality and cleanliness become critical.

Source: Hurwitz Group, Inc., Newton, Mass.

That might limit data mining's initial usefulness to local marketing campaigns, Powali said. "We want to find directions on how our national marketing should go, too," he said. "But if you take the company off on the wrong campaign, that's a lot of money just out the door."

GOING FORWARD

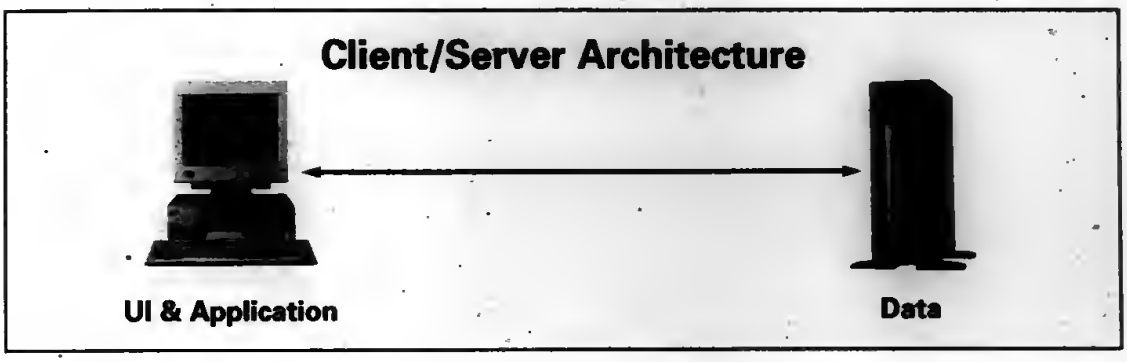
But not everyone is holding back. For example, Wal-Mart Stores, Inc. in Bentonville, Ark., built a data mining application to track sales of individual products at each of its retail stores [CW, May 26].

And data mining could make life easier for the "boatloads" of actuaries who manually review claims records at Colonial Penn Insurance Co., said Bryan McClain, director of data warehouse architecture at the Norristown, Pa., insurer.

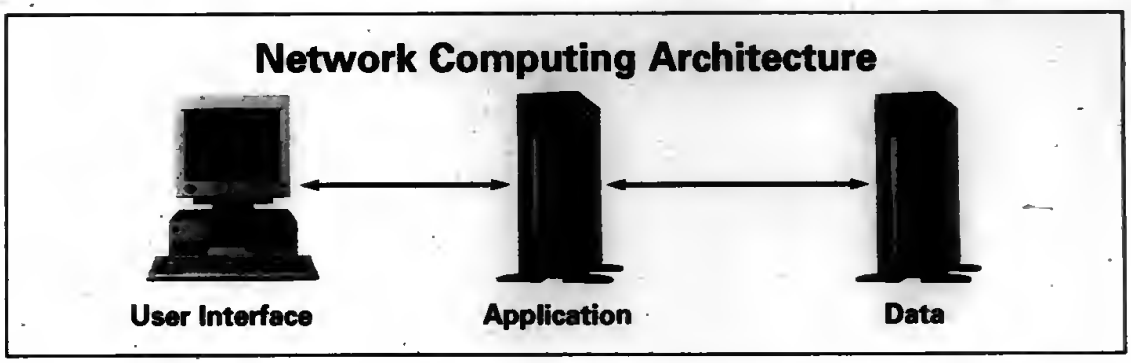
But data has to be thoroughly scrubbed beforehand to avoid skewed results, McClain said. Even then, the patterns that get unearthed "might be off in areas that don't really buy you anything," he said. "You can't just go by what the tool spits out." □

Get your Enterprise Applications off the Desktop and onto a Server where they belong.

Client/Server architecture places the user interface and application software on the desktop, and the data on the server computer. Unfortunately, managing enterprise applications on desktop PCs is an administrative nightmare.



Moving your applications to servers is the essence of Network Computing Architecture. Server-based applications can dramatically lower administrative costs while improving application performance, reliability and security.



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Faster 'net speed by 2002 on tap, but it will cost more

By Matt Hamblen

INTERNET BANDWIDTH broad enough to "support reliable videoconferencing and other complex transmissions should be available by 2002.

That's when Gartner Group, Inc. expects Internet service providers in the top 20% of U.S. metropolitan markets to offer a bandwidth capacity of up to 2.4G bit/sec. or higher.

But to get that level of service, corporate users will have to pay much more than today's prices, according to Eric Paulak, an analyst at Gartner in Stamford, Conn., and other analysts.

The higher bandwidth will come from a technology called gigaPOP (point of presence), a next-generation routing and switching infrastructure that will offer low-speed IP routing capability similar to what is available today. But Internet service providers also will incorporate an Asynchronous Transfer Mode switching core with the 2.4G bit/sec. capacity, which users can access through lower-speed IP routers, router vendors and analysts said.

The new service means administrators of large business-based networks will be able to select access methods based on price and performance, depending on location, analysts said.

STEEP PRICES

Analysts predicted the cost of this service could be well above the expected rise in the cost of conventional technology in the next few years. And administrators will have to strike deals with Internet service providers, depending on needs.

For example, the average cost of corporate Internet access via current technology already is 10% to 15% higher than one year ago, analysts said. They predicted a 15% jump in current technology by 2000, with 5% increases each ensuing year.

Today, a T1 connection for many corporate users is $1,500 to $3,000 per month, according to Federal Communications Commission regulators and analysts. UUnet Technologies, Inc. charges $1,700 per month, or $20,400 per year, for an average T1. Analysts said that annual cost could be $23,460 in 2000.

In the next several years, pricing will become harder to track. Network administrators will seek discounts by bundling Internet services with other network services. And large telecommunications companies will offer bundled services of local, long-distance, wireless and Internet access, analysts said.

GigaPOP technology will let companies get guarantees of service from point to point that will allow a secure exchange of large multimedia files and live video, vendors and analysts said. For example, physicians could discuss and examine X rays, and architects or engineers could alter schematic drawings. Such things can be done on the World Wide Web today, but only on a small scale, and users can't do them with reliability or ease.

"Everybody is talking [about] how the Internet will turn into a multimedia environment, but guess what? Without gigaPOP, those ideas of multimedia are only pipe dreams and won't happen," Paulak said in an interview last week.

MCI hopes to expand its existing services by using gigaPOP

Applications enabled by gigaPOP — such as teleconferencing — are particularly useful to businesses, not only to cut down on travel costs by executives, but also to sell goods and communicate with buyers or suppliers, analysts said.

The gigaPOP concept "sounds like a great idea," said John Gilmer, vice president of Instill Corp. in Palo Alto, Calif., which is providing electronic commerce for the food service industry. He said quality of service over the Internet isn't something his company worries about now, but it could be as it grows.

The first Internet service providers to offer the gigaPOP service will be those working on the Internet2 project, which is an effort that involves some federal government funding to develop a 2.4G bit/sec. network for use by the academic and research community in the U.S. Their research and development efforts for Internet2 will be introduced to the commercial world by 2002, analysts said. □

Hundt: Local telcos are holding up Internet growth

▶FCC chairman asks for open local loops

By Matt Hamblen

THE NATION'S top telecommunications regulator has been blasting local telephone and data service monopolies for months and now is blaming those companies for restricting Internet growth.

Outgoing Federal Communications Commission Chairman Reed Hundt wants congressional mandates to let the FCC open up local loops and local switches to more competitors, including Internet service providers. Local loop is an industry term that refers to the 2,000 feet or so of wiring leading to an office or building.

FREE THE LOOPS

"We need to free up those loops for high-speed digital communications," Hundt said last week in a speech to computer engineers at the Hot Chips conference at Stanford University. "We need rules that ensure that any competitor can lease them and put them to any new souped-up 'copper-copeia' use."

In an interview with *Computerworld*, Hundt said retail services provided by local phone companies should be deregulated on the condition that local providers be required to provide competition. He supports a "Free the Internet Law," following the lead of President Clinton and others who want to see the Internet untaxed and largely unregulated, except when the regulation helps competition.

SHARED SWITCHES

Hundt also said switches used by telecommunications companies to route traffic from users to service providers should be shared with competitors, or the FCC needs permission to ensure competitors can route traffic around them. The competition is a mandate of last year's Telecommunications Deregulation and Reform Act, which will lead to a larger capacity network able to support all types of commercial uses, he said.

Hundt also complained that pricing for T1 circuits, the basic data transmission circuits purchased by service providers from telecommunications companies, are "far higher than they should be," and he called for PCC power to lower the prices.

Several large service providers cheered Hundt's statements, but some local carriers were upset.

Hundt is "casting people as good or bad guys. ... Why should we be cast as bad guys because we're competitors?" asked Pat Koch, assistant vice president for government relations at Bell Atlantic Corp. in New York.

"Let's not forget that [Internet service providers] have turned a tremendous volume of traffic onto our network, and we don't feel we're getting the [monetary] return we need," Koch said. "Internet congestion was something not planned for, that networks weren't built for, and we're left to make do and not getting anything for it."

An official at AT&T Corp. in Basking Ridge, N.J., said Hundt's call for local deregulation is "premature." But AT&T agreed with Hundt's call for open competition. AT&T runs the largest Internet service provider, WorldNet, and has joined other long-distance carriers in expressing concern about problems entering local markets for data and voice. □

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HP to boost E-commerce apps

▶ *Repackages tech from integration projects for resale to new clients*

By Jaikumar Vijayan

HEWLETT-PACKARD CO. is cooking up some homegrown electronic-commerce technologies for its largest customers.

The company is getting ready to roll out customizable software technology and tools — borrowed from previous integration projects with large customers — that will let corporations quickly deploy large electronic-commerce applications.

ELECTRONIC COMMERCE

In the next six months, Palo Alto, Calif.-based HP will deliver a series of high-end products and services. They will target applications such as supply-chain management, business-to-business communications, customer service, sales, marketing and business-process management via the World Wide Web.

The idea is to eventually let customers use packaged tools where available to deploy electronic-commerce applications, instead of having to embark on costly and time-consuming development work.

Initially, HP will aim the products at large customers in the financial services and telecommunications markets. But during the next year, HP plans to offer the products as packaged application software for all users.

"It is a recognition that all of these [electronic-commerce] projects don't have to start from scratch every time," said Thomas Kucharvy, president of Summit Strategies, Inc. in Boston.

"What HP is trying to do is put together a staged program by which to take a set of expertise gained from a service level, to a tailored solution, to packaged software," he explained.

Some users like the idea. "There are a lot of tools for [small applications] on the Web, ... but when you are talking about the Internet replacing a lot of the really big stuff like [electronic data interchange], things become very scary," said Patrick Connolly, vice president of the Internet Group at InvestorsEdge.Com, an online financial services subsidiary of Neural Applications Corp. in San Francisco.

"It's good to have someone like HP behind you," he said

DIGITAL/ROBY

LOTS OF SUPPORT

"We feel comfortable with what we have done so far, but it is almost frightening when we think of our projections" for growth over the next year, said Lance Roncalli, vice president of business development at Spree.com, an online retail store in Thornton, Pa.

The company, which only recently went online, expects that it will soon need new tools and integration services, such as those proposed by HP, to manage online order processing and to establish business-to-business links with its suppliers and distributors.

"We are going to need some cooperation for sure" to manage this whole thing, he said.

The electronic-commerce software and services are being developed by HP's Enterprise Solutions Organization (ESO), a relatively new business unit.

ESO will work with HP's professional services organization to deliver the new capabilities to its largest customers.

But HP will rope in systems integrators, value-added resellers and other channel partners in delivering it to smaller customers. □

Internet security method on hold

A once-favored E-mail security technology has lost some momentum, which could mean a longer wait for secure 'net messaging.

Supporters of Secure/Multipurpose Internet Mail Extension (S/MIME) — which is based on encryption technology from RSA Data Security, Inc. in Redwood City, Calif. — had prepared a draft specification they had hoped to turn into an Internet Engineering Task Force (IETF)-sanctioned standard.

But S/MIME proponents soured some IETF members by missing a July 1 deadline to submit a request to form a working group, an early step in the standards process.

Meanwhile, a group led by supporters of RSA rival Pretty Good Privacy, Inc. (PGP) in San Mateo, Calif., last week were close to forming a working group and pitching a new electronic-mail security specification, called Open PGP, to the IETF.

"It's not a good day for S/MIME," said Paul Hoffman, co-chairman of the Internet Mail Consortium in Santa Cruz, Calif. Hoffman said S/MIME could get back on the standards track, but the result could be competing standards that don't work together.

"This is a contest between vendors," said Frank Manci, network technical manager at Colonial Savings Bank in Fort Worth, Texas.

S/MIME has garnered widespread support from vendors. It is in Netscape Communications Corp.'s Communicator 4.0, the beta release of Microsoft Corp.'s Internet Explorer and other clients. But there have been many reports of bugs among S/MIME clients.

Those bugs — along with the fact that developers pay a royalty to RSA to use S/MIME — drove some to consider an alternative.

Charles Breed, director of technologies at PGP, said Open PGP will use the Diffie-Hellman key-agreement method. The patent on that technology expires this week, so no royalties will be paid.

Netscape and Microsoft officials last week were standing by S/MIME. "This [issue] is overblown," said Dave Andrews, senior security product manager. "The [S/MIME] standardization process will move forward," he said.

Steve Dusse, chief technology officer at RSA, said there was simply a miscommunication between the S/MIME backers and the IETF over the July 1 deadline. He said PGP is "trying very hard to catch up to S/MIME." — Barb Cole-Gomolski and Sharon Machlis

Interoperability tops user E-mail concerns

By Barb Cole-Gomolski

TECHNOLOGY FOR BUILDING more robust electronic-mail systems will take center stage at the Electronic Messaging Association's Solutions Summit later this month. But users said interoperability between messaging systems still isn't good enough, and they want to hear more discussion about that.

The conference will be Sept. 24 to 26 in San Jose, Calif. The focus will be building industrial-strength messaging systems.

Several sessions are dedicated to directories and the Business Quality Messaging initiative, an effort to expand the use of message-enabled applications. The initiative is supported by IBM, Intel Corp. and Microsoft Corp.

Users agreed more reliable messaging systems are needed, but some said interoperability is still their main concern.

"I [oversee] 240 state agencies that all make their own procurement decisions, yet need to be able to communicate," said Jerry Johnson, senior policy analyst for the state of Texas.

Widespread support for Internet messaging standards such as Simple Mail Transport Protocol and Internet Message Access Protocol have greatly improved interoperability. But those specifications handle only basic functions, such as sending and retrieving E-mail messages.

When it comes to more sophisticated tasks, such as exchanging calendar information or collaborating on applications, users of disparate messaging systems must turn to third-party products, such as tools from The Mesa Group, Inc. in Newton, Mass.

"Our answer [to the interoperability issue] has been to consolidate around one mail system," said an E-mail administrator at LAM Research Corp. in Fremont, Calif.

DIRECTORY DILEMMA

Users said they were encouraged that the Arlington, Va.-based Electronic Messaging Association was emphasizing directories at the conference.

"Most sites don't know it, but they have a directory problem," said Terry McCarthy, managing director at Neoteric, Inc., a systems integrator in New York.

Many companies don't have a central directory where workers can look up information about their colleagues, such as E-mail addresses and telephone numbers. Instead, that information is scattered in incompatible directories in mail systems, operating systems and databases.

Dan Blum, a principal at Rapport Communication in Washington, will moderate a panel discussion on the Lightweight Directory Access Protocol (LDAP) Internet directory standard and X.500. LDAP originally was designed as a scaled-down alternative to X.500 for World Wide Web browsers, but recent enhancements to the LDAP specification could push it into the enterprise directory class, Blum said. □

COMPUTERWORLD

For these and other related links, point your browser at www.computerworld.com/links/s/s0901.html

- Electronic Messaging Association www.ema.org/ema-home.htm
- Industry Overview: Electronic Messaging www.creativ.com/report/resources/overviews/html/overv6.htm

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THINK OUT OF THE BOX

Policy, screening key to successful telecommuting

CONTINUED FROM PAGE 1

years to encompass 11.1 million people who work from home an average of about 19 hours per week. An estimated 42% of U.S. companies use telecommuting to cut employee commutes, free up office space, save the company money or offer family-friendly flexibility, according to a 1996 poll by Melville, N.Y.-based Olsten Corp., a placement company for temporary workers. This is up from 27% in 1995.

Even though the average telecommuter works from home two days per week, toting company equipment and intellectual property with them, many companies — including Pacific Bell — have embraced telecommuting as part of the corporate culture instead of a business arrangement that requires a policy. In many cases, arrangements are casually made between manager and employee.

"Most companies out there aren't even at the point where they could put [a policy] down on paper — even on one or two pages," said Jack Gold, an analyst at Meta Group, Inc., a Stamford, Conn.-based consultancy. "It's very haphazard."

DAVID YOUNG-WOLFF/PHOTO EDIT

In an exclusive *Computerworld* survey, just 22% of the department heads interviewed said their companies had a telecommuting policy.

Yet having a policy is critical to setting screening standards, establishing worker expectations, protecting the company's computers and intellectual property and determining legal liability, industry experts said. Some states, such as California, hold companies responsible for a telecommuter's safety in the home. But some employers in exempt states require that telecommuters sign agreements that release the employer from injury liability.

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New York-based Merrill Lynch & Co. last year adopted a policy that includes a four-step plan for screening, training, equipping and tracking telecommuters. Before signing on, employees must tell managers why they want to telecommute, how it will affect colleagues and clients, and how working from home would improve their productivity.

Merrill Lynch employees are taught how to prevent stress injuries by controlling office light and adjusting a chair or keyboard. After a telecommuter is set up at home, the company reviews photos of the space and suggests any safety changes that may be needed.

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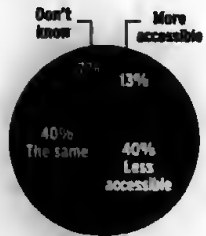
But corporate policies and careful screening aren't enough to ensure successful telecommuting. The missing ingredient in many cases is management support, analysts say.

Forty percent of managers polled by *Computerworld* found telecommuters less accessible and less a part of the office loop than their office-located peers. And managers said they find it difficult to measure employee performance when they can't see them. □

Are telecommuters more or less accessible than nontelecommuters?



Base: 100 department heads at various companies

Source: An exclusive *Computerworld* survey

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Visa limits may trip up IS recruitment efforts

By Julia King

TALENT-STRAPPED companies can forget about hiring imported IS staffers until after Oct. 1, when the U.S. Immigration and Naturalization Service (INS) will begin doling out the 1998 quota of 65,000 visas for all foreign professionals.

An INS spokesman last week said the agency processed a final 1,300 or so applications before it hit this year's quota — more than a month before the end of the government's fiscal year.

Although it was expected, the ahead-of-schedule closing has prompted calls for raising the cap on visas, or alternately, creating a special visa category for much-needed computer professionals.

"Based on the crunch the industry is facing, we would definitely lobby to increase the quota," said Sushma Rajagopalan, vice president of global recruitment at Mastech Corp., a systems integration firm in Pittsburgh. "Anything would be a reprieve, not just for us, but for all companies," especially those with year 2000 projects under way, she said.

Immigration attorneys said they have been told INS will still process applications over the next several weeks, but no visas will be issued until after Oct. 1.

Waiting a month is little more than an inconvenience in the short term, but in the long term, the cap on visas could cause major problems for U.S. employers. This is especially true as more companies ramp up their year 2000 efforts in the next two years.

Demand for foreign information systems professionals has never been higher, yet the visa cap, implemented in 1990, has remained the same for the past six years.

It also doesn't apply solely to high-tech workers. The 65,000 visas include those for doctors, nurses, engineers, fashion models and several other groups of professionals coming to work in the U.S.

"And if the government keeps stuffing new occupations under the H-1 [visa category], it will be an even bigger problem," said Carl Shusterman, a Los Angeles-based immigration attorney.

"We need to have higher quotas, and if we don't, we are basically shooting ourselves in the foot," said Rajiv Khanna, a business immigration attorney in Washington.

In the past two years, Khanna said his firm has seen a 400% increase in H-1 visa processing, with new demand coming largely from the high-tech sector.

The demand, he said, is for experienced IS professionals, who by law must be paid the prevailing wage rate received by U.S. workers in the same job categories.

But often, foreign workers earn more in the U.S. than their American counterparts, Khanna said.

Rather than fulfill one- and two-year contracts they may have with the U.S. companies that helped obtain their work visas, foreign IS workers "are jumping ship a lot" to follow the big money, Khanna said.

The average tenure of a foreign worker at a U.S. company is six months, he said. □

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ERIC SANS

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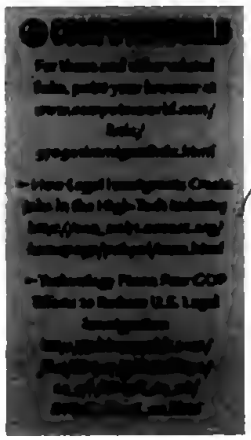

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Business continuity is focus of disaster recovery

By Julia King

IF YOU'RE LOOKING for a highly visible IS career in which no two workdays are alike, you may want to consider specializing in disasters.

Or more accurately, recovering from disasters, which can range from a flooded data center or disabled communications network to a boardroom scandal or bomb scare.

They are all in a day's work for a growing number of "business continuity" specialists, such as Susan Decker, a business recovery supervisor at Ford Motor Credit Co. in Dearborn, Mich.

Decker's job and title didn't exist three years ago. Back then, disaster recovery meant bringing crashed computer systems back to life.

Now, Decker, who reports to the company's executive committee, must keep the $2.1 billion auto loan business up and running in the event of a disaster. "It used to be, 'Can we get the data center back up and the LAN back up?' Now it's, 'Can we get the business back up?' " said Decker, a former systems analyst.

Companies more and more are expanding their definition of disaster recovery beyond technology to cover whatever it takes to keep a company running — all without missing a beat because of a disaster. That can include everything from prearranging for alternate office space if workers can't return to a smoke-damaged office, to cross-training employees so workers from a finance department, for example, can do the work of customer service representatives.

The St. Louis-based Disaster Recovery Institute has certified more than 1,700 business continuity professionals, said Jay Bender, executive director at the institute.

"Business recovery is about when the emergency is over, people have evacuated the facility, key resources are taken away and how you do business without them," said Michael Kadar, an information protection analyst and former computer hardware engineer at Detroit Edison Co. in Detroit.

SOBERING NEWS

Like many other companies, Detroit Edison began to consider business recovery much more seriously following the 1993 bombing of the World Trade Center and 1995's devastating bombing of the federal building in Oklahoma City.

The utility is drawing up a comprehensive emergency management plan, which includes recovering systems, business applications and business processes such as customer support, Kadar said.

At Capital One, a large credit-card processor in Richmond, Va., business continuity "involves making sure the customer doesn't see anything he shouldn't. It's making sure what could become a disaster doesn't become one," said contingency planning manager Martin Myers.

For example, during a huge winter storm last year, when snowbound employees couldn't get to work, customers who regularly call in to a support center in Virginia had no idea their calls were being routed to a backup call center in Tampa, Fla., Myers said.

The company's contingency plans included redundant systems as well as personnel to work overtime to handle the increase in calls.

Another key point that distinguishes business continuity from disaster recovery is that contingencies are thought about ahead of time and accommodated in all new computer systems. Business people and information systems professionals are required to work very closely on project teams, Myers said. □

User group wants storage vendors to smooth bumps in storage management. Page 59

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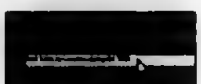

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PeopleSoft 7 opens up access, adds flexibility

By Randy Weston

HEEDING USERS' calls for more flexibility in its business-process automation software, PeopleSoft, Inc. has overhauled the underlying technology of its manufacturing, human resources and financial application package.

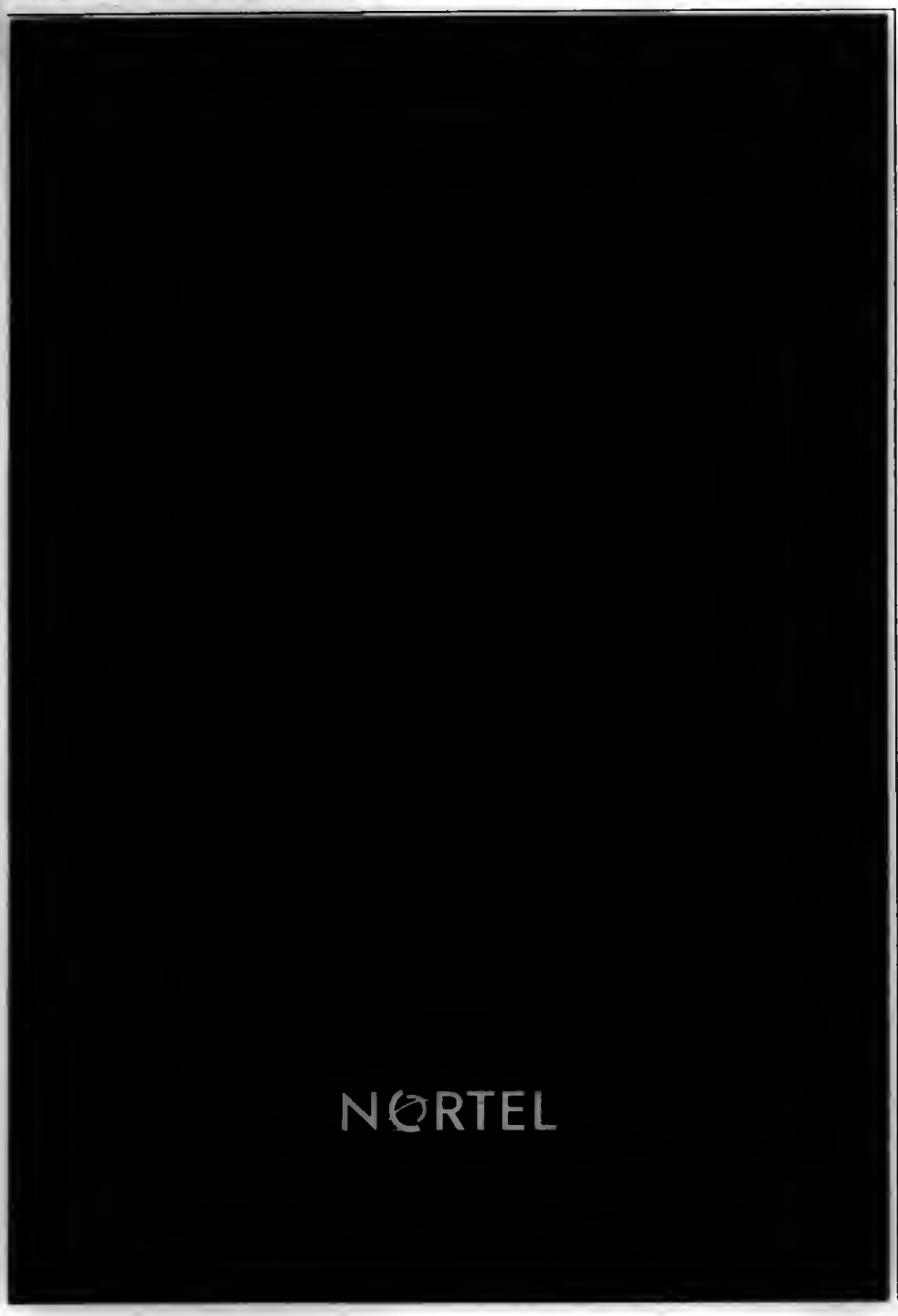
The Pleasanton, Calif.-based company is set to release PeopleSoft 7 by the end of September, three months ahead of the original release date.

Users said the most significant enhancement is a three-tier architecture that gives them the option of moving the processing layer of PeopleSoft applications from desktops to servers.

That allows companies to open up their system to casual users, who can access the processing layer of the software from a World Wide Web browser or central server once a thin presentation layer is installed on their desktop.

End users at remote offices, for example, will be able to check with the human resources department to update their benefits or submit a change of address.

Earlier PeopleSoft versions run on two tiers, with the processing done on a desktop that accesses a database server. Users said installing such an architecture can be costly and time-consuming. And once installed, the two-tier system eats up a lot of network bandwidth.



TWO-TIER TROUBLE

Project leaders at Mobil Oil Co. in Dallas are all too familiar with the hassle of installing a two-tier software system. The petroleum giant is preparing to go live next month with PeopleSoft 5 human resources and payroll applications, which require installations on 20,000 desktops nationwide.

"We would be well-advised to move to [Release] 7 as quickly as possible, given the three-tier architecture," said Norman Muttitt, technical project leader at Mobil.

Such a move would relieve the "network strain and user frustrations" related to the large installation, Muttitt said.

With the current system, Muttitt said he can't justify the cost of boosting network bandwidth to run the applications in remote offices. But the three-tier system will allow him to achieve the same end.

The new architecture is just part of the technology overhaul for the package. Version 7 also includes enhanced application development tools as well as integrated online analytical processing tools (OLAP).

Many users have been waiting since last year for the technology upgrade and skipped December's release of PeopleSoft 6.

SELF-SERVE APPS

"We are very interested in doing employee self-service applications," said Glenn Marfell, senior human resources manager at DHL Airways, Inc. in Redwood City, Calif. "We are on Version 5.1.1 now. We have purposefully elected to skip 6.0 and migrate directly to 7.0."

The three-tier architecture allows DHL to add a web server into the mix. After installing an estimated 200 to 400 PC kiosks at service centers around the country, DHL employees will able to check on the status of their benefits, change their address or take care of other basic human resources tasks themselves.

Independence Blue Cross in Philadelphia is upgrading to PeopleSoft 7 from Version 5.1 and plans to have it running by year's end. Systems director John Martines said the package's OLAP building blocks are pushing his company to adopt the technology.

"We would move more slowly toward OLAP if it weren't integrated in the application," Martines said. "It's hard to do it with the current data marts. PeopleSoft is providing an easy way to do it because it is providing sample cubes and tools which you can immediately start using." □

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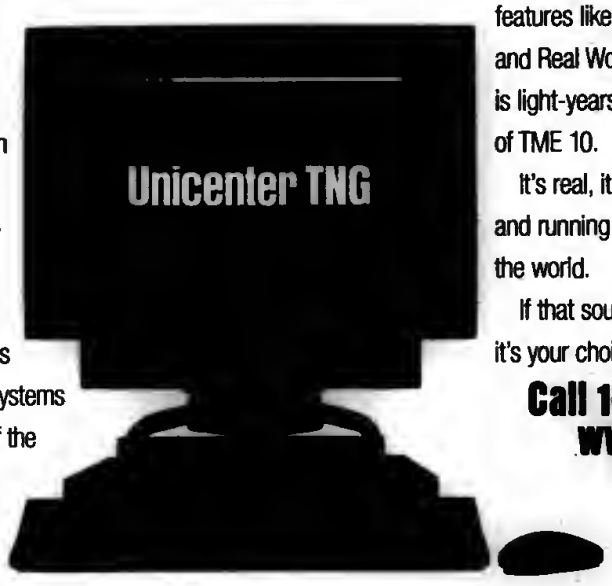

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Companies rope in wayward data marts

By Craig Stedman
BOSTON

THE DATA WAREHOUSING pendulum appears to be swinging away from standalone data marts and back toward more centralized approaches.

Information systems departments that built quick-and-easy data marts for impatient business units are now recasting things in an enterprise vein, according to users and analysts at a conference sponsored here last week by The Data Warehousing Institute.

Take Colonial Penn Insurance Co., for example.

In the past two years, the Norristown, Pa.-based company threw together 20 unlinked data marts that hold pieces of its records. But Colonial Penn just began overlaying the marts with a corporate warehousing framework that will give end users consistent access to all the information.

"We built the data marts to solve individual point problems and just to promote the concept of warehousing within the company," said Bryan McClain, director of data warehouse architecture at Colonial Penn. "Now we're going to lick our wounds and do things the way we wanted to in the first place."

That means imposing a common architecture, consolidating some overlapping data marts and off-loading feeds from production systems to a central staging database.

The stovepipe data marts were "a worthwhile investment," McClain said. "But I think we'll get a better return from what we're doing now."

Rules for building data marts

1. Set up separate data warehouse and data mart teams
2. Set guidelines to head off redundant development work
3. Ensure that data marts can be fed by a central warehouse
4. Define policies to limit data mart proliferation

Source: Gartner Group, Inc., Stamford, Conn.

Several other users here said they are taking similar steps to herd their data marts into enterprise warehouse corrals. And some companies that are just getting started with warehousing are piecing together "virtual data marts" that share a single database rather than standing apart from one another [CW, Aug. 4].

Data marts are appealing because they can be built quickly and often give users faster query responses than those from a full-fledged data warehouse. But warehouse managers said a collection of inconsistent data marts also can cause management migraines and block users from running queries across the full spectrum of corporate data.

"Data marts were easy to do for our first quick hit," said Ray Modlin, data warehouse manager at Pacific Bell's directory unit in San Francisco. "But right now, we can have different systems producing reports that give different answers to the same question." □

& Wary Hong Kong companies start to build data marts. Page 44

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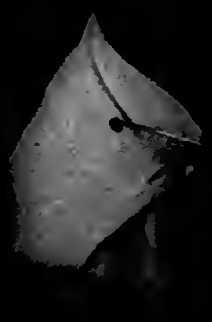

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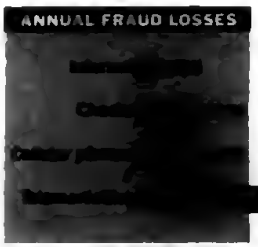
E-commerce brings applause, some fears

CONTINUED FROM PAGE 1

For example, when someone stole thousands of credit-card numbers from ESPN and NBA Web customers this summer, it confirmed many people's fears that the Internet is a dangerous place to do business. But those numbers were stolen off a server, not intercepted as buyers typed them in.

"The whole perception now is how 'unsafe' it is to purchase things on the Internet," said Vicki Zilaitis, director of technology at Time Warner, Inc.'s New Media division in New York. "As a community, that hurts all of us."



Source: National Fraud Information Center, Washington; First Union Bank, Charlotte, N.C.; Cellular Telecommunications Industry Association, Washington

Is there really that much to fear in cyberspace? An overwhelming number of computer security specialists and hackers — including the renowned Dark Tangent — said they buy on the Web.

"I do it all the time, and it doesn't worry me," said William Orvis. Orvis said he hears a lot of Internet security horror stories as a member of the Computer Incident Advisory Team at the University of California Lawrence Livermore National Laboratory in Livermore, Calif. "I don't think it's any worse than [giving a credit-card number] on the telephone."

Security experts said the volume of traffic on the Internet makes it unlikely that an individual credit-card number will be swiped. Fishing for credit-card numbers on the Internet also is likely to be unprofitable for the hacker, experts said, because it would be tough to pinpoint which packets contain credit-card data.

Even if hackers could accurately target such packets, most financial transactions are now conducted via Secure Sockets Layer encryption. It wouldn't be worthwhile for a hacker to spend hours on the computer trying to decrypt the data just to pick up a single credit-card number, security experts said.

"People misunderstand where the threat lies," said Winn Schwartau, president of The Security Experts, Inc. in Largo, Fla.

A more lucrative and easier target — and therefore a larger worry — is how data is secured from attack or mishap once it reaches its destination.

For example, a Daly City, Calif., man recently was accused of stealing 100,000 credit-card numbers by breaking in to the servers of an Internet service provider and several companies that conduct business online.

But simple mistakes also may be hazardous. A major credit-reporting agency, Experian, Inc., last month shut down its Web site after several of its reports on individuals were inadvertently sent to the wrong customers. Experian officials blamed the snafu on a software glitch that showed up only with an unexpectedly high volume of users; the system hadn't been tested for peak loads.

PARANOIA RULES

Public opinion polls, such as one conducted by Nielsen Media Research and CommerceNet, indicate that security fears are the single biggest obstacle for Internet users who make purchases on the Web.

"The media's done a real good job of creating paranoia," Schwartau said.

A lack of hard data about how common Internet theft is has left the business community with little way to measure the risk of electronic commerce against its potential reward.

"The market is too new to know what the reality is," said Steve Herz, senior vice president for Internet commerce at Visa International, Inc. in San Mateo, Calif. "Reality is based on experience. The Internet has not been in place there long enough for there to be experience. The Internet is all anecdotal."

But anecdotes rev up consumers more than other, more measurable forms of electronic theft.

Cellular phone fraud, for example, costs $600 million per year — about 4% of the industry's gross revenue, according to the Cellular Telecommunications Industry Association in Washington.

But few people fear using a cellular phone because of it. Companies haven't shied away from offering cellular phone service, and few big cases of cellular phone fraud hit the nightly news.

Individual cybermerchants soon may not have to worry about safeguarding such hot data.

The Secure Electronic Transaction (SET) technology being developed by Visa, MasterCard International, Inc. and other major credit-card companies, as well as hardware and software vendors, was designed to make it easier for buyers and sellers to securely exchange credit-card information over the Internet.

Buyers register with a bank and use digital certificates, not credit cards, to make purchases. So credit-card numbers never make it to the Internet.

Many information systems executives said SET is a big step toward secure Web purchasing. But some said a technological answer to Internet security may not be enough to lure consumers online.

"The perception [of a security threat] is there," Herz said. "And if we want Internet commerce to grow up, we're going to need to address that perception." □

Time Warner's Vicki Zilaitis: The perception of the Internet as unsafe for commerce "hurts all of us"

Administration can head off many security problems

By Sharon Machlis and Mitch Wagner

GOOD SECURITY for online commerce isn't rocket science, but some organizations ignore obvious steps to secure sensitive data — such as storing it on systems without two-way Internet connections, mandating hard-to-crack passwords for employees with access to the data and patching software security holes as they are announced.

"Good system administration prevents 98% of the problems you will ever have in electronic commerce," said Ira Winkler, former director of technology at the National Computer Security Association in Carlisle, Pa., and author of the book *Corporate Espionage*.

HORROR STORIES

Some security people fear that once IS administrators are satisfied that data crossing the Internet is secure, they won't pay enough attention to hardening the end points that collect the data.

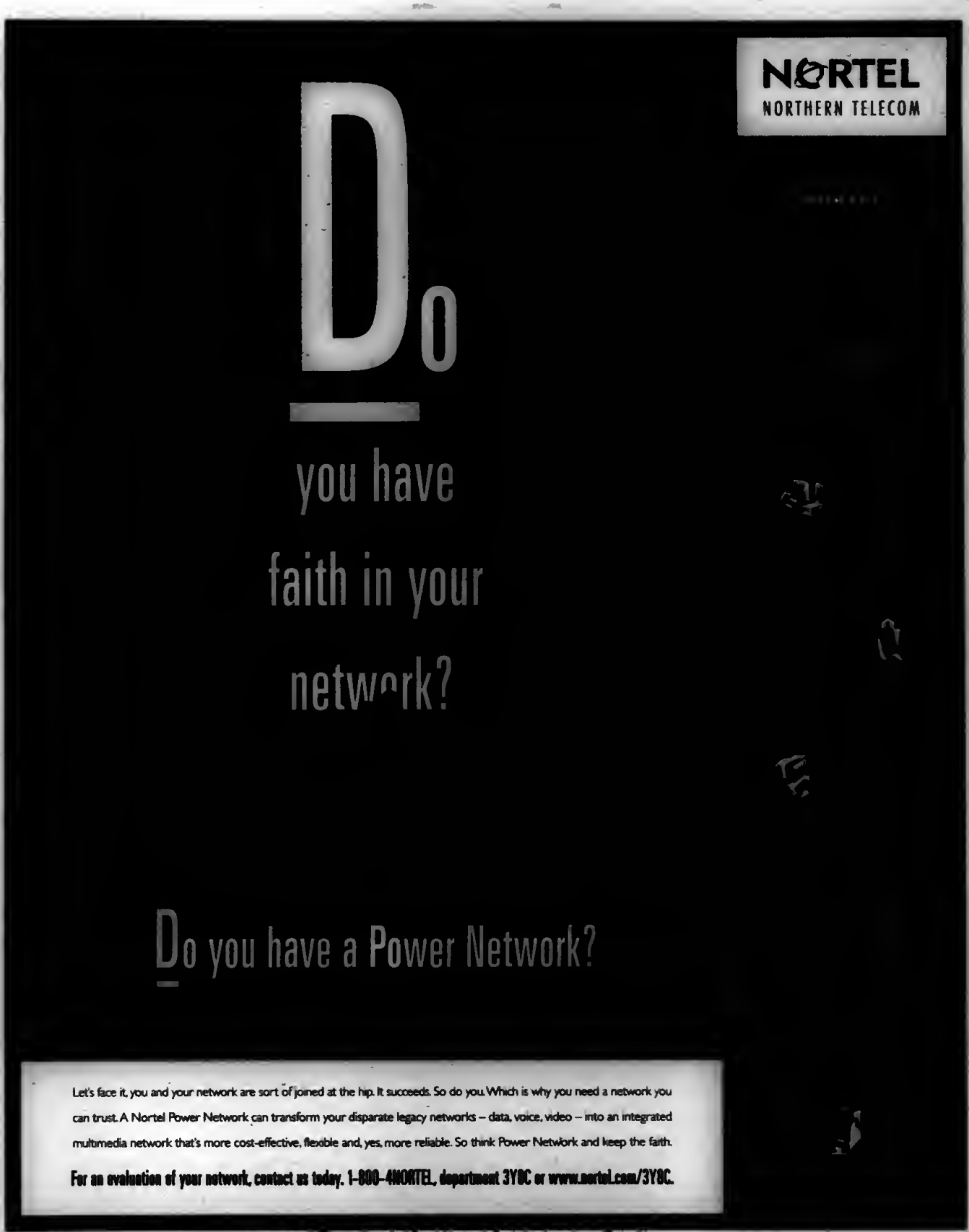
At Starwave Corp. in Bellevue, Wash., host of the NBA and ESPN World Wide Web sites, officials said credit-card numbers were taken by someone who had the proper password to enter an order-processing system.

"These stories about security problems make everyone nervous," said Bob Heise, senior vice president and chief information officer at Fruit of the Loom, Inc. in Bowling Green, Ky.

Security specialists said it is possible to protect credit-card numbers gleaned over the Web from Internet attacks.

System administrators can automatically move such data off the Web server to a secure server that isn't accessible from the Internet.

The server shouldn't permit any Telnet connections, accept almost no file transfer requests or sit behind a firewall, Orvis said. And the numbers should be scrambled when stored, so even if someone breaks in, they'll only find "an encrypted mess," said Winn Schwartau, president of The Security Experts, Inc. in Largo, Fla. □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Briefs

Lycos losses narrow

Search engine company Lycos, Inc. reported a $575,000 loss for the quarter ended July 31, an improvement over a $2.2 million loss for the same period last year. The Framingham, Mass.-based firm said quarterly revenue jumped from $2.7 million to $7.8 million and annual revenue increased from $5.3 million to $22.3 million.

FTC eyes Intel deal

The Federal Trade Commission (FTC) is looking into Intel Corp.'s planned $420 million purchase of three-dimensional chip maker Chips & Technologies, Inc. A request for information from the FTC isn't unusual and doesn't mean the agency will oppose the deal.

Lucent investment

Lucent Technologies, Inc. said it will become a shareholder, investor, development and marketing partner with GlobalCast Communications, Inc., a start-up that develops multicasting technology. Lucent also said it will give GlobalCast exclusive rights to market products based on Bell Laboratories' multicast transport protocol.

Baan names new CFO

The Baan Co. named Klaas Wagenaar, a former financial officer at Cap Gemini Group, to replace Chief Financial Officer Jan Westerhoud, who is leaving for personal reasons. The Dutch company also said it will consolidate its finance and administration organizations.

Suit threatens protocol

Novadigm, Inc. and Marimba, Inc. last week said they are entangled in a legal dispute that could hold up the publication of the World Wide Web Consortium's Distribution and Replication Protocol. Novadigm said the protocol — designed to let users distribute software, data and Web content to enterprise users — appears too similar to a patent it holds for "fractional differencing." In March the firm filed a lawsuit against Marimba for patent infringement. Marimba officials said the lawsuit is baseless.

Feds side with Cray in dumping dispute

▸ *Final commission ruling set for Oct. 3*

By Tim Ouellette

THE U.S. supercomputer market could change drastically next month if the U.S. government goes through with plans to punish Japanese vendors for alleged dumping practices.

Cray Research, Inc., which has been losing market share to Japanese competitors, could emerge with little competition in the U.S. market.

Cray, an Eagan, Minn.-based subsidiary of Silicon Graphics Inc. (SGI), said alleged dumping by NEC Corp. and Fujitsu Ltd. threatens its existence.

HURTS R&D

"Good market share and margins are essential to stay in competition," said John Sullivan, SGI's lead counsel. "We are trying to cut [the dumping] off before it has such an impact on our bottom line that we cannot sustain the [research and development] to go forward."

NOT A SUPER DEAL

The Department of Commerce's recommended tariffs on Japanese supercomputers, if enacted next month, could change the future of supercomputer deals in the U.S.

Vendor	Sample bid	Recommended tariff	Final price
Cray	$35M	None	$35M
NEC	$35M	454%	$193.9M
Fujitsu	$35M	173%	$95.6M
Other Japanese firms	$35M	313%	$144.6M

The U.S. Department of Commerce last month found that dumping did occur by NEC and, to a lesser extent, Fujitsu in a contract bid at the University Center for Atmospheric Research (UCAR). As a result of the threat of injury to U.S. industry, the department recommended that huge tariffs be placed on the Japanese firms.

In Washington, the U.S. International Trade Commission last week heard testimony from both sides. The commission will make a final ruling on Oct. 3.

Tight competition and low prices offered by Japanese firms have reduced Cray's worldwide market share from 73% in 1993 to 51% last year.

Large companies such as NEC can afford to take a loss in an effort to gain market share because supercomputers are only a small part of their business, said Earl Joseph, Cray's director of competitive analysis.

Cray submitted its claim last summer after UCAR chose NEC's bid. Sam Adams, vice president for marketing at NEC's U.S. subsidiary, HNSX Supercomputer in Littleton, Mass., denied any dumping.

UCAR has stood by the government's request to wait until a final decision is made on the dumping claims before it finalizes the purchase. But one UCAR official claimed Cray lost the bid because it couldn't fulfill all contract requirements.

NEC officials have floated the ideas of a technology exchange with Cray if the claim is dropped or number crunching at off-site locations and sending the results back to U.S. clients.

But talks have stalled, partly because NEC officials said the Commerce Department is biased toward Cray, and because of the complex international supercomputer market.

"We are willing to continue conversations with NEC," Sullivan said. "But since the discussions must address [NEC's] pricing actions and include the Department of Commerce, [NEC hasn't] been willing to address that." □

• Battle won, war continues

Judge strikes down encryption restriction

By Sharon Machlis

SOFTWARE EXECUTIVES battling government restrictions on encryption products have hailed a U.S. District Court ruling last week that current export regulations are unconstitutional.

"We are very pleased that Judge [Marilyn Hall] Patel has confirmed that computer programs, like any other literary work, are fully protected by the First Amendment," said Bob Kohn, vice president and general counsel at Pretty Good Privacy, Inc. in San Mateo, Calif. "That includes computer programs that implement cryptography."

The ruling is part of mathematics professor Daniel Bernstein's five-year legal battle to publish on the Internet encryption source code he developed as a graduate student. He expects to finally post his code sometime this month at *http://pobox.com/ndjb/crypto.html*.

SOME WEAPON

"People will be surprised," said Bernstein's attorney, Cindy Cohn at McGlashan & Sarrail in San Mateo. The code "fits on a [8.5- by 11-inch] page. . . This is the 'weapon?'"

Encryption software had been classified under the same guidelines as military goods.

Judge Patel issued an injunction that bars the government from interfering with Bernstein publishing his project named Snuffle. But the injunction governs only that case, according to a statement released by the U.S. Department of Justice. "Until this issue is resolved, export controls on encryption software remain in place," it said.

On Thursday, Patel agreed to stay the injunction until Sept. 8 pending the government's appeal.

"It's a wonderful step forward," said D. James Bidzos, president and CEO of RSA Data Security, Inc., an encryption firm in Redwood City, Calif. "The bad news is that there's still a long way to go. The battle is still on Capitol Hill." There, a bill in the House of Representatives would liberalize export rules, while one working its way through the Senate would codify existing requirements and promote the use of third-party key recovery.

> "At a minimum, this cuts another few slices ... off of what's left of export control" – Stewart A. Baker, Steptoe & Johnson

The Commerce Department also is considering rules that would require firms offering encryption software for download on the World Wide Web to get a government license.

Government officials are concerned that widespread use of strong encryption will hinder law-enforcement efforts if criminals can send encoded messages that investigators can't crack. Current rules mandate an export license for strong encryption, including provisions for encoding-key recovery by third parties.

Last week's decision likely will affect a broader issue than just the right of an academic to publish research work, predicted Stewart A. Baker, a partner at Steptoe & Johnson LLP in Washington. "At a minimum," he said, "this cuts another few slices . . . off of what's left of export control." □

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21 Dir./Mgr. MIS Services, Information Center
22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr./PC Mgr., Tech. Planning, Administrative Services
23 Dir./Mgr. Sys. Development, System Architecture
31 Programming Management, Software Developers
41 Engineering, Scientific, R&D, Tech. Management
60. Sys. Integrators/VARs/Consulting Management

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12. Vice President, Asst. Vice President
13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
51 Sales & Mktg. Management
70. Medical, Legal, Accounting Mgr.

OTHER PROFESSIONAL MANAGEMENT
80. Information Centers/Libraries, Educators, Journalists, Students
90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply.)
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(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No
Internet Products ❑ Yes ❑ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
(a) ❑ Internet software
(b) ❑ Internet browsers
(c) ❑ Web authoring/development tools

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65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/ Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
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23. Dir./Mgr. Sys. Development, System Architecture
31. Programming Management, Software Developers
41 Engineering, Scientific, R&D, Tech. Management
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Operating Systems
(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ❑ Yes ❑ No
Networking Products ❑ Yes ❑ No
Internet Products ❑ Yes ❑ No

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OPINION

Bumble ware "The nicest thing about Novell is

that nobody hates Novell."

That's John Slitz, former IBM marketing executive, talking about the embattled network software company he just joined as senior vice president of marketing. Last week, Slitz was making the get-to-know-you rounds with reporters and editors at the Java Internet Business Expo in New York. As I listened to him pitching the usual sincere but vague marketing pledges about listening to customers and dealing honestly with the press, it struck me that Novell has become the Gerry Ford of the computer industry.

This one-time powerhouse of PC LAN networking is every bit as affable and well-meaning as our former president. Nobody hated Gerry Ford. Then again, nobody respected his capabilities much, either. In an industry where perception weighs just as heavily as reality, this bumbling image may be the biggest problem Novell has.

So I was hoping that Novell CEO Eric Schmidt would give a really rousing keynote speech last Wednesday morning at the Java show. The press loves the soft-spoken, engagingly intellectual Eric. We all seem to think "visionary" is actually part of his name. So I was hoping that after *nearly* six months on the job, he would have something compelling to say — like maybe what his master plan for saving Novell entails. I'm sure the 1,000 people he just put out of work in Novell's painful downsizing weigh heavily on his mind, to say nothing of the stunning $122 million loss in the last quarter.

But his speech was about as stirring as a college lecture, repackaging the standard visionary stuff he's been handing out in interviews for ages. The size and importance of the 'net. The potential of Java. The future of information "utilities." At one point, he earnestly told the audience that today's 'net-savvy children are tomorrow's adults. No duh, as my 12-year-old would say.

So OK, nobody hates Novell. How about giving us a reason to respect it again?

Maryfran Johnson, *Executive editor*
Internet: *maryfran_johnson@cw.com*

LETTERS

Date-change issue a fraud? Just wait until Jan. 1, 2000

As deputy project manager on a large and well-regarded year 2000 government project, I have to take serious exceptioo to David Starr's characterization of most year 2000 efforts as "frauds," ["IS chief: Year 2000 a fraud," CW, July 7].

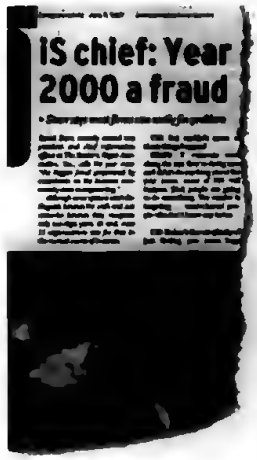
We have been scrupulous in ensuring that no new work is being done in order to speed up and assure the end result.

And my state has been very serious about lean, mean staffs.

We have just barely enough maintenance staff to keep up with new laws, new procedures and a growing state population.

To ask them to do year 2000 on top of that without some outside help is unreasonable, but we have had excellent cost-effectiveness supplementing their work with a few contracted programmers.

Stephen Anderson
Olympia, Wash.


IS chief: Year 2000 a fraud

Given the iceberg nature of the year 2000 problem (90% below the surface), it's not surprising that an enterprise still in the midst of doing detection testing would still be seeing mostly just the tip of the iceberg. Yet that still doesn't justify CIO David Starr of *Reader's Digest* claiming that year 2000 is "the biggest fraud . . . since re-engineering."

Many enterprises benefited greatly from re-engineering. Regrettably, *Reader's Digest* wasn't among them. Although the company did "re-engineer" 20% of its staff out of their jobs since 1994, it also has halved its stock value during the same period and underperformed the S&P 500 over the past three years by about 140%, according to a July 14 article in *Business Week*.

And in spite of the company having "one of the world's best [databases], with information on 100 million people," the financial analysts say it's being run into the ground. Maybe all those managers who are taking the year 2000 problem seriously know something Starr and his colleagues don't. Apparently, it wouldn't be the first time.

Leon A. Kappelman
Co-chairman,
Society for Information Management
Year 2000 Working Group
Denton, Texas

David Starr is wrong when he says most firms can easily fix year 2000 projects. I am a hands-on project manager for our year 2000 upgrade project and can tell him how difficult this project is.

We have a staff of 100 in our information systems department and a full one-third of them are working on year 2000 activities. Many of the remainder are in support roles for the project.

We also have six consultants who work on our AS/400 applications (which in our case are the majority of our programs).

Also, the use of scanning technology and text editors are helpful in finding dates, but living, breathing people are needed to manually go through all the modules.

There are no software silver bullets out there that find all dates.

With such an "easy" project, completed at such a low cost, I can't wait to see how much Starr will have to spend come Jan. 3, 2000, when his systems are failing miserably around him.

Patricia Boyce
Scottsdale Insurance Co.
Scottsdale, Ariz.

Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

Intellectual capital miscounted at AT&T

Bruce Hoard

I know the pain of being fired. Back in the early '70s when I was tending Douglas fir trees side-by-side with migrant workers and winos at a local Christmas tree plantation in western Washington state, my boss tired of my act and discharged me summarily from his ragged ranks. No severance. No golden parachute. Just *adios*.

I'm sure you can imagine my sense of disintermediation.

After all, the only thing between me and the poor house — $1.60 per hour, as I recall — had been rudely removed from my grasping hands. There I was, a long-haired hippie slime on the street.

Fire me for mismanagement, but please, please don't fire me for being dumb.

NO CONFIDENCE

But at least I wasn't fired for being, you know, dumb. Which is more than former — and no longer little-known — AT&T President John Walter can claim.

As you may recall, the AT&T board recently gave Walter a resounding vote of no confidence when he was proposed as successor to affable-as-asphalt Chairman Bob Allen.

The board members said Walter didn't have the intellectual assets necessary for the job, which makes me wonder if: A) you have to be super-smart to be chairman of AT&T; or B) any dummy can be president.

I mean, fire me for raiding the corporate trust fund. Fire me for mismanagement. But please, please don't fire me for being *dumb*. Oh, you say he quit? But of course. Who needs to make $10 zillion per year anyhow?

I'm sure Walter said he wanted to spend more quality time with his hamster colon or that he was looking forward to watching more reruns of *F Troop*.

But we all know he was shown the exit out back, where the little people come and go.

Oops, look out for that screen door, John. Gotcha!

A FLY ON THE WALL

Fortunately, *Computerworld* had a bug planted at the recent board meeting when Walter received his resounding rebuff.

The following is a word-for-word excerpt of the exchanges that took place at that meeting:

BillyBob Tankfarm, chairman, Blontos Petroleum Industries: That ol' boy Johnny Walter sure is stupid, huh? He didn't want to buy whatchacallit, NRC.

Arthur von Overcoat, chairman, Avaricious Consumption Corp.: That's NCR, BillyBob. But, boy is Walter dumb. He didn't even know how many local telcos we've put out of business since divestiture.

Magnus Gladstone, chairman, Pollution Production Unlimited, Inc.: To think, that silly man was worried about losing a few billion dollars over our entry into the local telephone market. *Harrumph!*

It is, of course, hard to argue with this kind of steely logic.

And rather than try, our man Walter teetered briefly on the corporate precipice, then fell heavily before he could be pushed.

So what's next for Walter? I mean, it's not like the guy has to start doing keynote addresses at village idiot conventions.

Maybe he could get a gig on *Jeopardy* so he can re-establish his intellectual credentials. Imagine how well he would do if they had categories such as Bloated Corporations, Mismanagement and Backstabbing.

As for Bob Allen and his plutocratic board — now that they have rid themselves of alien profit-making units such as Lucent Technologies and retro-thinkers such as John Walter — they can get back to the corporate helm, firmly grasp the controls and make sure their mighty ship of state stays dead in the water. □

Hoard is a freelance writer in Groton, Mass. He can be reached at bruceh6687@aol.com.

Do you want your kid to be a computer guy?

John Gantz

"Uncle John, guess what?"

This is my nephew on the phone, a former Deadhead and wilderness guide now eking out a living at the bottom of the corporate food chain. He's a cool guy, one of my favorite relatives.

Having taken his time finishing college and plenty of time after that without a steady paycheck, he was quite happy to have a job in accounts payable at a small nonprofit agency.

"I'm moving out of payables. They're going to put me in charge of the department's computers."

I know he was excited, and I hope I communicated some general level of enthusiasm. But I've gotta tell you, in my mind I was trying to decide which is a worse: a job telling creditors the check is in the mail or one telling end users they need more memory to run the next version of Windows.

Yes, the salary surveys offer good news for IS professionals as demand outstrips supply. These days there's even a certain status with the lay public if you say you're "in computers."

But not all IS jobs are equal, and running the department's computers seems as exciting as being the key operator for the copiers was 20 years a ago. Where could he go from this job? What could he aspire to? To run a help desk someday? That doesn't sound much like my nephew.

THREE CAREER TRACKS

"The other guy left, and they want someone more outgoing to replace him."

Suddenly my nephew's future career took an uptick. The skills his employer are picking him for are exactly the skills I predict will be needed for IS greatness in the next millennium: personal communications, the ability to work with colleagues, adaptability and poise (a word I've never heard included in the list of factors for success in IS).

I see three distinct professions evolving for IS workers:

The first is in software development, the choicest jobs for which will be at vendors such as Microsoft, Nintendo and SAP.

The second is IS implementation and operations, with the elite of the profession working at outsourcers or large companies betting the ranch on IS (e.g., Merrill Lynch, Wells Fargo, the NSA).

The third? Online business management, working at companies with major operations that make money or conduct transactions online.

Not all IS jobs are equal. Where can you go from this job?

The online groups at companies such as Dell and Federal Express are progenitors of this new kind of organization.

Corporate IS organizations have always had subgroups for performing different functions, but outsourcing is blurring the lines between them. And the career success factors for each of the new categories are so different that I have trouble seeing how the average CIO or IS organization can optimize on all three.

Given my nephew's skill set and demeanor, I wouldn't wish development or operations jobs on him. But I could see him moving up the ladder of online business management. So I'm happy for him. All he had to look forward to before was a promotion from payables to receivables. Now he'll be "in computers."

So what's your advice to the younger generation? Stay on the business side? Work at Microsoft?

And what about you? Have you done a skills and aptitude inventory lately and mapped yourself against the new job success factors? You've got more to lose than any kid just starting out and a tougher assignment if you feel the need to jump the tracks. □

Gantz is senior vice president at IDC in Framingham, Mass. He can be reached at jgantz@idcresearch.com.

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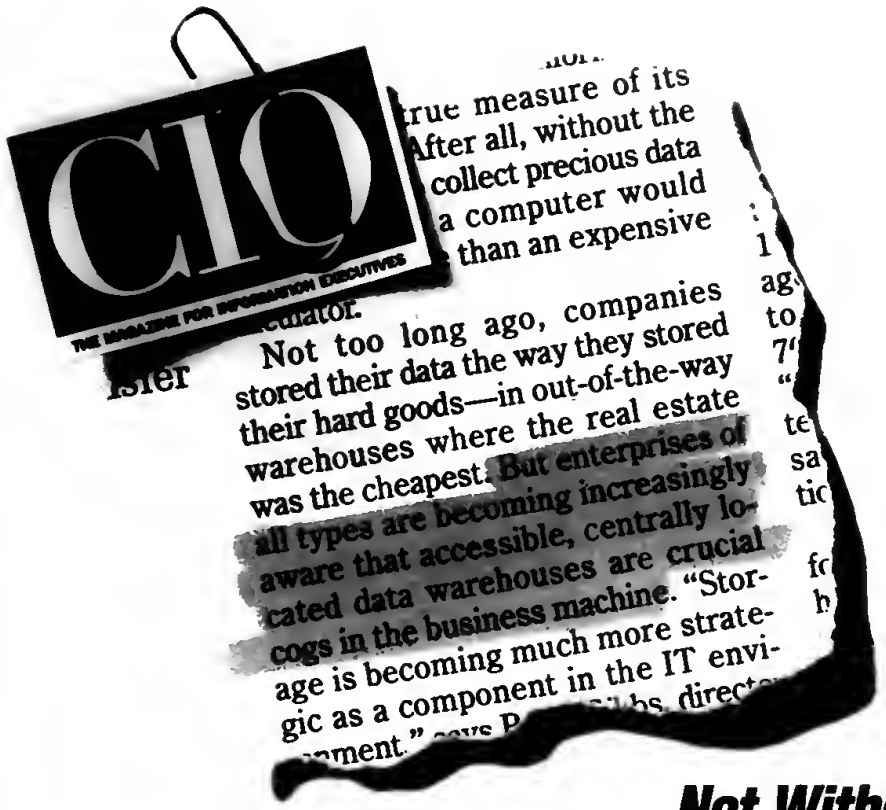
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was the cheapest. But enterprises of
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age is becoming much more strate-
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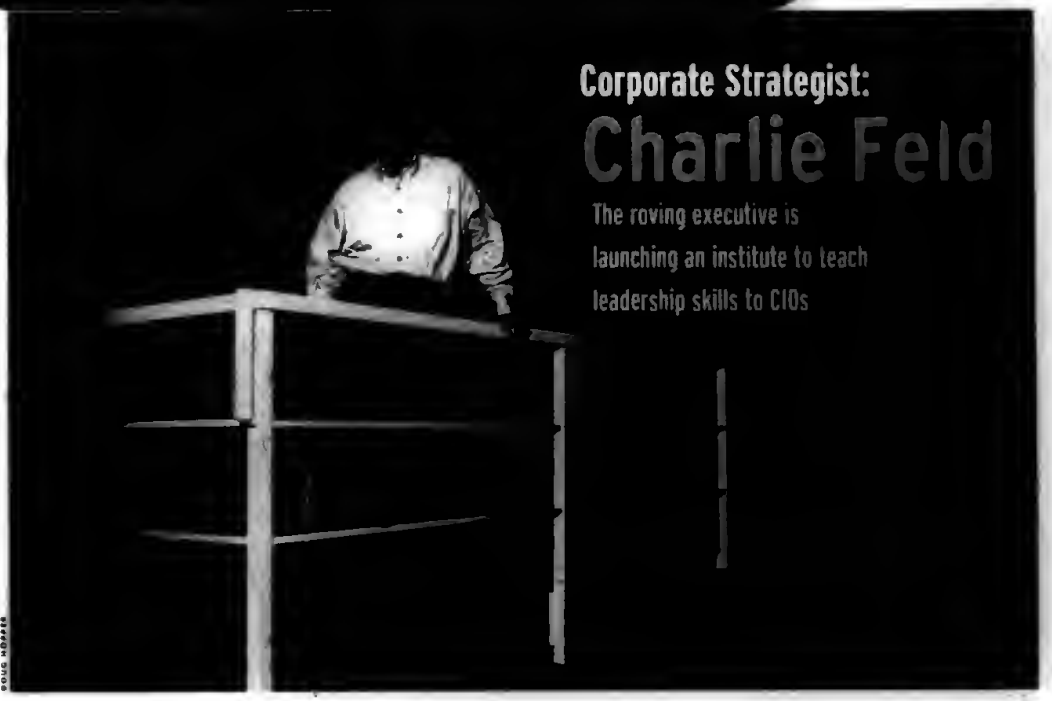
Corporate Strategies

Briefs

ELECTRONIC COMMERCE SPENDING

- Businesses will spend about $31 billion on hardware, software, products and services by 2001
- An estimated $228 billion in goods and services will be bought and paid for over the Internet in 2001
- The consumer-to-business market will account for $26 billion in purchases
- The business-to-business market will account for $202 billion in purchases

Source: Piper Jaffray Inc., Minneapolis



Corporate Strategist: Charlie Feld

The roving executive is launching an institute to teach leadership skills to CIOs

By Julia King
DALLAS

IN THE LATE 1980s, he boosted the fortunes of Dallas-based Frito-Lay, Inc. with an award-winning logistics information system that put portable computers in the hands of potato chip delivery people.

In the 1990s, he orchestrated the design and deployment of the world's largest, real-time, integrated rail system at Burlington Northern and Santa Fe Railway Co. Germany's national railroad later paid $8 million to license the software.

There also have been stints at Delta Air Lines in Atlanta and Pittsburgh-based Westinghouse Corp.

Now, Charlie Feld, a 55-year-old Bronx native, is retiring from his highly successful career as an executive hired gun — not to head off into the sunset, but to launch yet another IS career at his Texas ranch. There, Feld plans to start a sort of chief information officer graduate institute with a heavy-duty emphasis on what he considers the critical missing ingredient in virtually all troubled technology organizations — leadership.

The curriculum will include his own IS operating model — one that is based on real-life connections between a company's business and its information systems. The for-profit institute, designed for IS operating managers, is scheduled to open in January.

CIO WORKSHOPS

It will offer, among other things, one- and two-day strategic technology overviews and benchmarking sessions with groups of CIOs working on similar projects. Session leaders will include Feld and other partners at Feld Group, Inc., his consultancy in Irving, Texas.

"Our notion is, you've got to run IS like a business," Feld said recently in his trademark soft-spoken, confident manner.

Just as a company's quarterly financial performance is monitored for possible adjustments, "IS has got to monitor for wins and losses and recalibrate continuously," he said. "What we want to do is obliterate the traditional IS model of boom, bust, boom, bust, where organizations throw a lot of technology at something, then it goes blank.

Feld, page 42

China to keep closer eye on stock transactions

By Don Tennant
HONG KONG

CHINA IS stepping up government monitoring of its stock exchanges in Shanghai and Shenzhen. The move comes as the country seeks to privatize state-owned enterprises and Chinese leaders recognize the political impact of stock performance on the country's image.

Chinese authorities "want to set up a modern system to keep more regular control of stock exchange trading," said Zhang Shaohua, manager of the Shanghai representative office of SAS Institute, Inc.

SAS ROLE

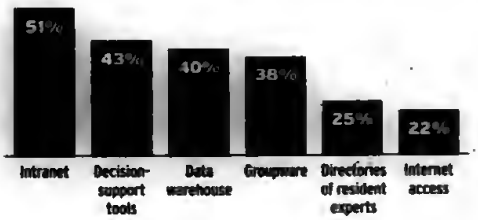
SAS, the Cary, N.C.-based decision support and data warehousing software firm, is working with the Shanghai Stock Exchange to build a system to enable China's central government to analyze stock transaction data to keep a closer eye on

Stock exchanges, page 42

Snapshot

KNOW IT ALL

What technology tools offer the greatest potential for enhancing your organization's knowledge base?



Base: 431 executives at organizations in the U.S. and Europe

Source: Ernst & Young LLP, New York

Corporate Strategies

Case Studies • Trends • Outsourcing

Briefs

Year 2000 claims

Insurance companies don't have the money to pay year 2000 damage and litigation costs that some estimate could reach hundreds of billions of dollars, according to the N. P. James Insurance Agency in Concord, Mass., which specializes in technology insurance issues. Some business owners may believe they are protected from year 2000-related claims in existing policies, but they aren't, said Nancy P. James, head of the agency. Expect insurance companies to inform clients by year's end — before policies are renewed for 1998 — that year 2000-related costs will be excluded from coverage, she said. A decision not to cover year 2000 problems could curb litigation because of the problem associated with trying to recover damages from corporate assets, she said.

U.K. bank hires Unisys

Unisys Payment Services Ltd., a subsidiary of Unisys Corp. in Blue Bell, Pa., is taking over the document-processing operations of Girobank PLC, the U.K.'s largest cash-handling bank. Financial terms of the eight-year contract weren't disclosed. The move is in line with the trend toward outsourcing in the U.K. Unisys also handles document processing for three other U.K. banks.

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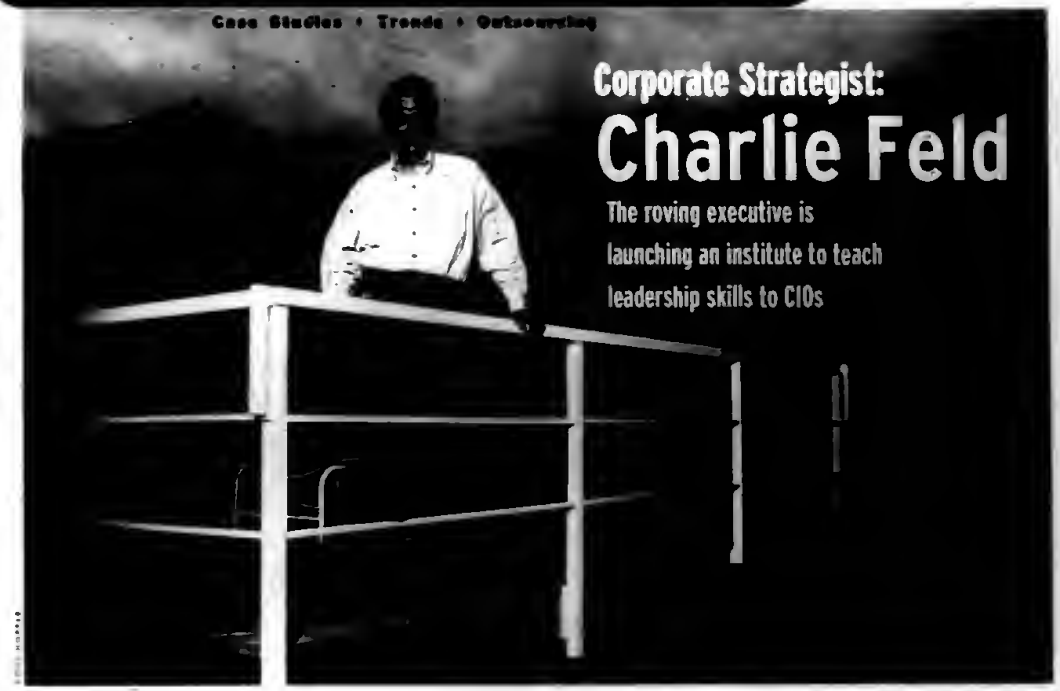

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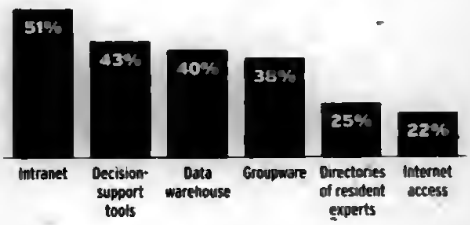

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Feld aims to teach leadership

CONTINUED FROM PAGE 41

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Feld speaks from experience.

"It's a lesson Frito-Lay learned the hard way," said CIO Steve Schuckenbrock, who worked with Feld on interim IS assignments for two years before taking on the top IS spot at the multibillion-dollar snack company in 1995.

Under Feld's leadership in the 1980s, Frito-Lay had a data warehouse that had been in place since 1989, giving the company an unprecedented view of where, how and for how much each bag of its chips was sold.

"Charlie leads by positive example."
– Bruce Freeman, Burlington Northern & Santa Fe Railway

But in 1991, after Feld's departure from the CIO's suite, investments in IS stopped because of the attitude, "IS was working, so why put more money into it?" Schuckenbrock said.

"The problem was that that strategy lasted too long," Schuckenbrock added.

Because Frito-Lay hadn't continually enhanced its handheld computer systems, it got caught behind the eight ball when it came time to support a new product distribution strategy.

"We had to develop new systems that could accommodate multiple distribution formats. The old handhelds didn't do that," Schuckenbrock explained. So in 1995, Frito-Lay invested $130 million in a second generation of about 15,000 handheld systems, the last of which were deployed last January.

Now, Schuckenbrock said, "we will go back to a more steady investment stream," with $15 million to $20 million per year being enough to "continuously meet business needs."

Another of Feld's cardinal rules for IS leadership is that IS and CIOs, in particular must be "part of the mix."

As he walked around Burlington Northern and Santa Fe's grassy campus, it is apparent that Feld is just that.

Each person he encounters along a walk on the Fort Worth, Texas, campus, from the parking lot to the company's massive transportation information center, has a warm smile and handshake or squeeze on the arm for Feld.

PERSONAL TOUCH

He returns the greetings, addressing workers by name, then inquiring about a newborn baby, a child away at college or a spouse who may have been sick or has taken a new job that required lots of travel.

Earlier in the morning, after a final meeting with the railroad's 30 or so IS directors, Feld and CIO Bruce Freeman — Feld's 46-year-old hand-picked successor — exchanged hugs as several directors looked on with tears in their eyes.

Charlie Feld
Migrant IS executive

- **1971 to 1981: IBM account manager at Frito-Lay**
- **1981 to 1992: CIO at Frito-Lay**
- **1992 to present: Interim CIO and president of Feld Group. Recently served as interim CIO at Burlington Northern & Santa Fe Railway**

"Charlie works at knowing people, and he leads by positive example," Freeman said later. "I've never once heard him raise his voice in anger. He can take the worst situation and find the positive in it."

Feld also has a knack at persuading others to do the same. For example, last winter, when the railroad's stock dove from $85 to $71 per share in the face of mammoth snowstorms that paralyzed rail traffic through much of the Midwest, Burlington Northern executives dispatched Feld to New York to reassure securities analysts.

He gave the money managers a progress report on the company's gargantuan Transportation Support System, which was then about four months away from completion. He told them the system would drastically cut costs and boost efficiencies by integrating all transportation-related activities, customer information and financial data that support Burlington Northern's 35,000 miles of railway, 200,000 cars and 4,600 locomotives.

MAN OF HIS WORD

Feld also gave them his unequivocal assurance that the system would be ready for cutover on July 4, 1997. And it was.

Over the next several days and weeks, "the stock steadily climbed," said Freeman, who said he has no doubt that Feld's chat with the securities analysts was a key reason for the rise.

Simply put, "He's just one of the best leaders I've ever seen," Freeman said. □

Stock exchanges under closer scrutiny in China

CONTINUED FROM PAGE 41

trading practices. Company officials said the Shanghai exchange is using SAS's suite of analytical tools to build a test platform for a monitoring system to identify trading patterns and uncover unusual trading activity.

That is a departure from recent practice. Stock trading was banned in China as a form of gambling until the Shanghai Stock Exchange opened in 1991. The Chinese government has routinely sought to influence trading through the publication in newspapers of official views and positions. Zhang said the authorities now are taking a more pragmatic approach to the stock market and its impact on the development of the economy.

"The stock exchange in China has some political influence," Zhang said. "This generation of government officials is more practical — they have more respect for the market." The authorities need real-time information on stock trading to take "more proper" measures in regard to formulating economic policies, such as selling stock in China's ailing and inefficient state-owned enterprises, Zhang said.

China is setting up watchdog systems for Shanghai and Shenzhen stock exchanges

It isn't surprising that China's central government is seeking more control of locally run stock exchanges in Shanghai and Shenzhen, said Robert Losey, chairman of the finance department at American University in Washington. Rules that have let foreign and domestic buyers and sellers trade stock at different prices have left the markets open to fraud attempts.

With a monitoring system to record trades by time and volume in place, "you know who did what and when, and if something shady happens — you know what happened," Losey said. "There's no question the government over there wants to know as much as possible. Paranoid [isn't] the right word, but they are protective."

Lee Richardson, SAS's director of Asia-Pacific operations, said, "The big picture there is that SAS is used as a tool to give emerging markets' stock exchanges more legitimacy and transparency."

Richardson said SAS once worked with the Korea Stock Exchange to develop a system to track trading patterns and stock price fluctuations in an effort to prevent insider trading.

Zhang said the development phase of the Shanghai project involves an investment of $250,000 and is part of a five-year licensing deal under which an SAS support technician will be loaned to the Exchange for a year. The trial coincides with the Exchange's move into a new building in Shanghai later this month.

Next year, in the second phase of the project, the monitoring system will be linked to the Stock and Securities Regulation Commission and the Shanghai municipal government and will provide real-time information to those bodies, Zhang said.

A similar monitoring system is likely to be implemented next year at China's only other stock exchange in Shenzhen, Zhang said.

"Shenzhen is much more irregular — there's much less government control, so regulation is badly needed. Shanghai is easier to deal with, so they wanted to deal with this first," Zhang said. He said Chinese authorities are eager to compare trading activity in Shanghai and Shenzhen. □

Tennant is the editor of Computerworld Hong Kong. Computerworld *staff writer Matt Hamblen contributed to this report.*

Tapping developers

SAS Institute's Shanghai office is taking advantage of China's software development expertise by working with Shanghai software house Tian Zhi to develop SAS applications for overseas customers.

In a two-month project completed in March, Tian Zhi developed a long-distance telephone call reporting system to be used by the Philippines Long Distance Telephone Corp.

"They were able to take the specs written in the Philippines for that SAS project and develop the system based upon those specs in China," said Lee Richardson, SAS director of Asia-Pacific operations.

SAS plans to outsource a six-month project — an English-language financial analysis and reporting system for Wing Hang Bank in Hong Kong — to Tian Zhi.

"We are using these two projects as a test to find a new way to reduce operational costs and increase efficiency," said Zhang Shaohua, manager of SAS Institute's office in Shanghai.

— Don Tennant

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CONTINUED FROM PAGE 41

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"Charlie leads by positive example."
– Bruce Freeman, Burlington Northern & Santa Fe Railway

But in 1991, after Feld's departure from the CIO's suite, investments in IS stopped because of the attitude, "IS was working, so why put more money into it?" Schuckenbrock said.

"The problem was that that strategy lasted too long," Schuckenbrock added.

Because Frito-Lay hadn't continually enhanced its handheld computer systems, it got caught behind the eight ball when it came time to support a new product distribution strategy.

"We had to develop new systems that could accommodate multiple distribution formats. The old handhelds didn't do that," Schuckenbrock explained. So in 1995, Frito-Lay invested $130 million in a second generation of about 15,000 handheld systems, the last of which were deployed last January.

Now, Schuckenbrock said, "we will go back to a more steady investment stream," with $15 million to $20 million per year being enough to "continuously meet business needs."

Another of Feld's cardinal rules for IS leadership is that IS and CIOs, in particular, must be "part of the mix."

As he walked around Burlington Northern and Santa Fe's grassy campus, it is apparent that Feld is just that.

Each person he encounters along a walk on the Fort Worth, Texas, campus, from the parking lot to the company's massive transportation information center, has a warm smile and handshake or squeeze on the arm for Feld.

PERSONAL TOUCH

He returns the greetings, addressing workers by name, then inquiring about a newborn baby, a child away at college or a spouse who may have been sick or has taken a new job that required lots of travel.

Earlier in the morning, after a final meeting with the railroad's 30 or so IS directors, Feld and CIO Bruce Freeman — Feld's 46-year-old hand-picked successor — exchanged hugs as several directors looked on with tears in their eyes.

Charlie Feld
Migrant IS executive

- 1971 to 1981: IBM account manager at Frito-Lay
- 1981 to 1992: CIO at Frito-Lay
- 1992 to present: Interim CIO and president of Feld Group. Recently served as interim CIO at Burlington Northern & Santa Fe Railway

"Charlie works at knowing people, and he leads by positive example," Freeman said later. "I've never once heard him raise his voice in anger. He can take the worst situation and find the positive in it."

Feld also has a knack at persuading others to do the same. For example, last winter, when the railroad's stock dove from $85 to $71 per share in the face of mammoth snowstorms that paralyzed rail traffic through much of the Midwest, Burlington Northern executives dispatched Feld to New York to reassure securities analysts.

He gave the money managers a progress report on the company's gargantuan Transportation Support System, which was then about four months away from completion. He told them the system would drastically cut costs and boost efficiencies by integrating all transportation-related activities, customer information and financial data that support Burlington Northern's 35,000 miles of railway, 200,000 cars and 4,600 locomotives.

MAN OF HIS WORD

Feld also gave them his unequivocal assurance that the system would be ready for cutover on July 4, 1997. And it was.

Over the next several days and weeks, "the stock steadily climbed," said Freeman, who said he has no doubt that Feld's chat with the securities analysts was a key reason for the rise.

Simply put, "He's just one of the best leaders I've ever seen," Freeman said. □

Stock exchanges under closer scrutiny in China

CONTINUED FROM PAGE 41

trading practices. Company officials said the Shanghai exchange is using SAS's suite of analytical tools to build a test platform for a monitoring system to identify trading patterns and uncover unusual trading activity.

That is a departure from recent practice. Stock trading was banned in China as a form of gambling until the Shanghai Stock Exchange opened in 1991. The Chinese government has routinely sought to influence trading through the publication in newspapers of official views and positions. Zhang said the authorities now are taking a more pragmatic approach to the stock market and its impact on the development of the economy.

"The stock exchange in China has some political influence," Zhang said. "This generation of government officials is more practical — they have more respect for the market." The authorities need real-time information on stock trading to take "more proper" measures in regard to formulating economic policies, such as selling stock in China's ailing and inefficient state-owned enterprises, Zhang said.

China is setting up watchdog systems for Shanghai and Shenzhen stock exchanges

It isn't surprising that China's central government is seeking more control of locally run stock exchanges in Shanghai and Shenzhen, said Robert Losey, chairman of the finance department at American University in Washington. Rules that have let foreign and domestic buyers and sellers trade stock at different prices have left the markets open to fraud attempts.

With a monitoring system to record trades by time and volume in place, "you know who did what and when, and if something shady happens — you know what happened," Losey said. "There's no question the government over there wants to know as much aa possible. Paranoid [isn't] the right word, but they are protective."

Lee Richardson, SAS's director of Asia-Pacific operations, said, "The big picture there is that SAS is used as a tool to give emerging markets' stock exchanges more legitimacy and transparency."

Richardson said SAS once worked with the Korea Stock Exchange to develop a system to track trading patterns and stock price fluctuations in an effort to prevent insider trading.

Zhang said the development phase of the Shanghai project involves an investment of $250,000 and is part of a five-year licensing deal under which an SAS support technician will be loaned to the Exchange for a year. The trial coincides with the Exchange's move into a new building in Shanghai later this month.

Next year, in the second phase of the project, the monitoring system will be linked to the Stock and Securities Regulation Commission and the Shanghai municipal government and will provide real-time information to those bodies, Zhang said.

A similar monitoring system is likely to be implemented next year at China's only other stock exchange in Shenzhen, Zhang said.

"Shenzhen is much more irregular — there's much less government control, so regulation is badly needed. Shanghai is easier to deal with, so they wanted to deal with this first," Zhang said. He said Chinese authorities are eager to compare trading activity in Shanghai and Shenzhen. □

Tennant is the editor of Computerworld Hong Kong. Computerworld *staff writer Matt Hamblen contributed to this report.*

Tapping developers

SAS Institute's Shanghai office is taking advantage of China's software development expertise by working with Shanghai software house Tian Zhi to develop SAS applications for overseas customers.

In a two-month project completed in March, Tian Zhi developed a long-distance telephone call reporting system to be used by the Philippines Long Distance Telephone Corp.

"They were able to take the specs written in the Philippines for that SAS project and develop the system based upon those specs in China," said Lee Richardson, SAS director of Asia-Pacific operations.

SAS plans to outsource a six-month project — an English-language financial analysis and reporting system for Wing Hang Bank in Hong Kong — to Tian Zhi.

"We are using these two projects as a test to find a new way to reduce operational costs and increase efficiency," said Zhang Shaohua, manager of SAS Institute's office in Shanghai.

— Dan Tennant

Building a Data Mart?

Just Because You Use Good Parts Doesn't Mean It Will Fly...

Most data mart projects have a hard time getting off the ground because they're built with software tools from so many vendors. Even the most carefully designed data mart won't fly if the components haven't been designed, tested, and optimized to work with one another. And what happens when you have a problem? If something isn't working right, it's always going to be "the other vendor's fault." The solution? A SmartMart™ data mart from Information Builders.

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Warehousing catches on

▸ *Hong Kong begins to invest in data analysis, data marts*

By Jacqueline Mailloux
HONG KONG

DATA WAREHOUSING has been around a long time — even before the term was coined. Now, organizations in Hong Kong are looking to leverage the competitive advantage that comes from data analysis.

Although they lag behind U.S. counterparts, local companies are beginning to implement data warehousing strategies, often launching the process by setting up smaller data marts.

At the recent 8th International Database Workshop, organized by the Hong Kong Computer Society, vendors and end users said local companies are serious about getting data warehousing projects off the ground.

Several project managers working on warehousing efforts said tighter competition and leaner profit margins are the key motivations for initiating data warehouse plans.

For example, Cathay Pacific Airways Ltd. is developing a customer information system to gather financial data for its customer service program, said Brodie Lee, a data architecture manager in the airline's information technology department.

Competition is behind the project, Lee said, as many U.S., European and Asian commercial carriers have implemented similar systems or plan to put a system into action.

Lee said Cathay's data warehousing project has taken a while to gain momentum. The proposal for a comprehensive decision-support system (DSS) initially was greeted with akepticism by Cathay Pacific's managers, who had reservations about getting a return on investment, Lee said.

But a pilot project is expected to finish before year'a end, Lee said.

The data comes from many sources for Cathay Pacific's data warehouse project, Lee said. He said one of the biggest challenges is cleansing the company's data to meet the requirements of a DSS. "We should have known our data better," he said.

MARTS PREFERRED

Full data warehousing production systems in Hong Kong — except in the finance and banking arena — are rare, according to local industry observers. Most local companies tend to look toward data marts.

Data warehouses generally provide comprehensive data and history pulled from many areas, but data marts are smaller systems that are often targeted for a specific application or by one department.

Hong Kong Air Cargo Terminals is piloting its data warehouse project with a data mart used to analyze cargo volumes and determine where revenue is generated, project manager Benedict Lam said.

According to Lam, getting end users to participate was the most difficult part of the rollout. The users saw the benefits of the system, but it took time for users to use the DSS, Lam said.

Handling user questions was another challenge. "We had to anticipate their questions" and organize information to make it useful, Lam said. To meet that demand, the IT department organized user groups and rolled out prototypes.

Simon Tai, an IT architect at IBM, said smaller companies in Hong Kong understand the value of a DSS, but often they are caught evaluating the proliferation of tools without really understanding the underlying business issues. He said many of those smaller users will pick up on data marts. □

Mailloux writes for Computerworld Hong Kong.

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● "Holistic Forecasting" Fin. & Logistics Director EASTMAN KODAK

● KEY NOTE SPEECH: "Challenges and Opportunities of Demand Forecasting in the Apparel Industry" VP. of Forecasting LEVI STRAUSS & CO

● "Managing Product Transitions" Planning Manager SUN MICROSYSTEMS

● "Using the Concept of the "Forecasting Cube" to Benchmark Forecast Error" Demand Manager LEVER BROTHERS

● "Successfully Integrating Forecasting with Supply Chain Management" Supply Chain Manager BELLSOUTH

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● "Champagne Vision... Beer Budget" Dir. of Sales Planning NK LAWN & GARDEN

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Quebec, Web vendors have words over language law

By Greg Enright
TORONTO

LA BELLE PROVINCE may not look so pretty for Quebec companies and organizations that want to do business over the World Wide Web.

Because of a requirement recently imposed by the provincial government, any business with a head office in Quebec that advertises over the Internet to Quebec consumers must have a bilingual site. Otherwise, businesses face fines that range from $500 to $1,400.

Besides producing sizable headaches for businesses, some observers said such actions could have larger implications for the Internet itself.

The growth of the medium as a business tool isn't encouraged by the attitudes of some "brain-dead bureaucrats," said Bill St. Arnaud, director of network projects at Ottawa-based Canadian Network for the Advancement of Research, Industry & Education, Inc.

"It has a totally counterproductive effect on fostering business and development of Internet-based business in Quebec," St. Arnaud said. "The Web and Internet are global; you want companies to come to Quebec that sell their wares worldwide. That's your market — it's not just Quebec."

Rob Hall, vice chairman at the Canadian Association of Internet Providers, said regulations will stifle business growth on the Internet. "I fear governments getting in there and regulating the Internet, because most regulators don't have a clue what the Internet is," he said. "The worst thing they could do is flail at this and say, '... we don't understand this, so we're just going to regulate it.'"

On June 2, the Office de la Langue Francaise, the division of the Quebec government responsible for the regulations, issued a warrant to computer retailer Micro-Bytes in Montreal. The warrant said Micro-Bytes' Web site wasn't fully bilingual and the company had 30 days to change it.

Micro-Bytes manager Marc Silverman said that before the warrant's arrival, his retail Web site was 75% bilingual. Since then, he has brought the site up to 95%. But rather than comply fully, Silverman said he would like to see the case go to Canada's Supreme Court.

The manager at the three-store chain said language requirements were unnecessary because the Quebec marketplace already dictates that most businesses must advertise in both languages, especially French, if they want to succeed.

St. Arnaud agreed. "I'm sure Quebec customers will see [commercial Web sites] in French because the market will dictate it," he said.

Gilles Racine, information and administration director at the Office de la Langue Francaise, said he questioned Micro-Bytes' motive for not complying with Quebec's regulations. "Some companies like Micro-Bytes are trying to make this a political issue, and at the same time, they're getting a lot of publicity," Racine said.

A business might feel fine about having a predominately English Web site, but such an attitude isn't respectful of the Quebec population, Racine said.

"This is probably the only place except for Eastern Ontario and New Brunswick where it is possible to live in French and work in French and have a full life in French. And if you just let the market dictate what will happen, ... very often you will forget those who don't speak your language." □

Enright writes for Network World Canada.

SHORT

Upgrade pitfalls

Any number of hitches can turn a major version upgrade of packaged application software — the large business software systems made by companies such as SAP AG, The Baan Co. or Oracle Corp. — into a costly nightmare, according to a study by Hurwitz Group, Inc. in Newton, Mass. Among the potential pratfalls are: upgrading software that has changed source code, unsupported user interfaces for custom applications and poor documentation on system changes prior to the upgrade.

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Hard Disk Drive Storage	4-Gigabyte (FWSCSI)	9-Gigabyte (FWSCSI)	9-Gigabyte (FWSCSI)
LCD Touchscreen Diagnostics	[illegible]	[illegible]	Not Available
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Hot Swappable Expansion	2 Bays (Optional)	6 Bays	6 Bays
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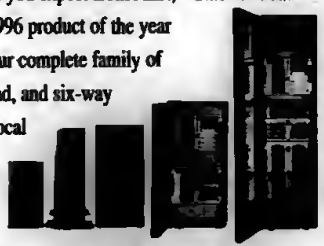

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Briefs

CATALOG WEB SITES

- In 1995, only 11% of catalogers offered some sort of electronic catalog.
- 29% of catalog Web sites don't offer any kind of online ordering.
- Business-to-business catalogers were the biggest Web site spenders, with 23% investing $50,000 or more in Web site design, compared with 12% of hybrid catalogers and 11% of consumer catalogers.
- Only 9% have more than four employees working on the Web site full-time. 41% don't have a Web site staffer. One-fourth have one full-time Web site employee.

Base: 226 respondents

Source: Catalog Age magazine

Users say Win NT ready for intranets

▶ *But concerns remain about scalability*

By Carol Sliwa and Laura DiDio

IT MAY NOT BE perfect, but Windows NT is ready for prime time as an intranet platform, according to many end users and consultants.

On the plus side, Windows NT is easy to use, affordable and packed with features, such as a World Wide Web server, that users of other operating systems have to buy separately. Windows NT also offers a native development platform. And because its popularity is soaring, applications tend to come out earlier on NT than on other platforms.

On the down side, scalability and reliability issues continue to nag Microsoft Corp. Some users also complained that development tools still aren't up to snuff. But, for the most part, those concerns aren't keeping Microsoft users from using NT in their intranets.

"[Microsoft is] just getting it together now [to the point] that we would trust them enough as one of our major systems," said Brian Keller, a systems manager at Ohio State University in Columbus. "Up until the last couple months, they haven't been quite there yet."

Ohio State uses its intranet to disseminate information and enable research groups to collaborate.

NT ready, page 48

ERIC MILLETTE

Internet/Complete's John Monahan says Windows NT Server for an intranet is one-third the cost of a Hewlett-Packard machine

• 'Single point of failure'

'net domain snafus black out Web sites

By Stewart Deck

NETWORK SOLUTIONS, INC. recently angered two Internet registrants, the Nasdaq Stock Exchange and Santa Cruz, Calif.-based Web Communications LLC, by accidentally canceling their registrations. A Network Solutions spokesman described the individual blackouts as the result of a clerical error and a database deletion error made by the Internet registrar.

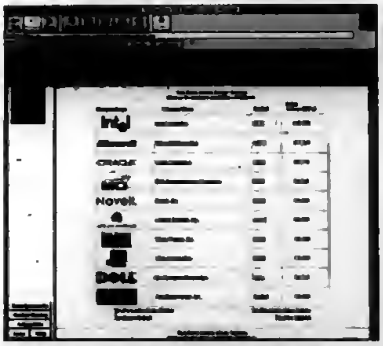
Reed Walker, a Nasdaq spokesman, said the stock exchange and Network Solutions have had a dispute over whether Nasdaq had paid its registration last fall. Nasdaq said the bill was paid and that the Herndon, Va.-based registrar had lost the check. Network Solutions responded last December and said it was looking into the matter. Walker said Nasdaq hadn't heard anything further until its Internet address was canceled last Tuesday.

Chuck Gomes, Network Solutions' director of customer programs, declined to elaborate on the problem beyond saying it was an issue "between us and Nasdaq." Aggie Nteta, a Network Solutions spokeswoman, said the dispute "is something we are reviewing."

For Web Communications, this was the second time in the past two months that the California Internet service provider has been left floating in limbo. In July, someone sent a forged fax to Network Solutions asking to delete Web Communications from the 'net. It was. Network Solutions restored Web Communications' registration within a day or two, but many Internet watchers grumbled that this was just one example of the problems caused by having one central domain name registrar.

Web Communications was accidentally cut off recently when Network Solutions was running a name deletion database, Nteta said. "We were doing a special batch of deletions, and [Web Communications'] domain somehow became part of that database," Nteta said. Nteta declined to elaborate about how Web Communications'

'net snafus, page 48



Network Solutions' errors reportedly deleted Nasdaq's Internet domain registration

McAfee eases virus updates using 'push'

By Sharon Machlis

MCAFEE ASSOCIATES, INC. has developed a way for administrators to "push" antivirus software updates to their users from a single location.

Several beta testers who used the product, McAfee Enterprise Console, said it cut the time needed to keep end user software up to date.

"We don't have to go and touch each desktop manually," said Andrew Hoffman, information systems manager at Omnipoint Corp. in Colorado Springs. "It saves many, many hours." The console's use of push technology means IS staffers don't have to worry about managing log-on scripts to automatically update antivirus soft-

Observers question McAfee's entry into firewalls.

McAfee, page 48

Briefs

Hacking SGI

Hackers have found e way to gain high-level access to computer systems running most Silicon Graphics, Inc. (SGI) IRIX operating systems through Internet file transfer protocol software installed on all IRIX systems by default. SGI has advised administrators to either install patches on their systems, upgrade to IRIX versions 6.3 or 6.4 or disable the file-transfer program, called ftpd. More information is available at *ftp://sgigate.sgi.com/security/19970801-01-PX*.

CompuServe abroad

CompuServe Network Services, Inc. has entered into agreements with four major international networks to carry Internet traffic through Europe and Asia. The Hilliard, Ohio-based, company now serves 1,250 companies in 105 countries. CompuServe signed agreements with Ebone in Europe; DE-CIX in Germany; MAE-Paris, with connections in France; and Internet Initiative Japan, with seven networks in Singapore, Malaysia, South Korea, Indonesia, Thailand, Hong Kong and Taiwan.

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By Sharon Machlis

MCAFEE ASSOCIATES, INC. has developed a way for administrators to "push" antivirus software updates to their users from a single location.

Several beta testers who used the product, McAfee Enterprise Console, said it cut the time needed to keep end user software up to date.

Observers question McAfee's entry into firewalls.

"We don't have to go and touch each desktop manually," said Andrew Hoffman, information systems manager at Omnipoint Corp. in Colorado Springs. "It saves many, many hours." The console's use of push technology means IS staffers don't have to worry about managing log-on scripts to automatically update antivirus soft-

McAfee, page 48

NT ready for intranets

CONTINUED FROM PAGE 47

"It's a desktop operating system grown up. Nearly everything else that we've ever done has been a mainframe operating system grown down," Keller said. "So it's a different approach, but I think Microsoft's gotten NT big enough and such to be reliable in the enterprise."

Michael Moran, a vice president of information systems at Fremont Bank in Fremont, Calif., had concerns that SQL Server wouldn't be able to deliver database information fast enough. However, consultants convinced him that Microsoft's SQL database has "enough horsepower."

But users who need very large databases may be less certain, according to Dan Hanson, president of Magnum Computers, Inc. and member of the 1,200-member Cleveland NT user group.

"I would like to see more support for the terabytes of data warehouses," Hanson said. But the advantages of NT on the intranet outweigh the disadvantages, he said. "We find the biggest advantage of Windows NT is its ease of use. It's just so simple to set up and configure."

Cost is the biggest attraction for John Monahan, president of Internet/Complete, Inc. in Milwaukee and head of the Wisconsin NT user group.

"Compared to a Hewlett-Packard machine running HP/UX, Windows NT Server used as an intranet platform is only one-third the cost," Monahan said.

SOME HEADACHES

Most of the headaches with Windows NT are infrastructure- and security-related, but those issues relate to the underlying network, not the intranet specifically, said Michael Nielsen, a senior IS staff specialist at Sundstrand Aerospace Corp. in Rockford, Ill.

John Tease, who is working on an intranet for a division of the U.S. Navy, still has concerns about scalability. Tease, a senior systems analyst at Columbia Research Corp. in Arlington, Va., expects that 3,700 users will be hitting the intranet at the same time to share information.

"NT server alone is not going to suffice," Tease said. He added that network performance is suffering as the division migrates from Novell, Inc.'s NetWare to Windows NT. "We're taking a close look at NT clustering so we can have a network that can handle the load."

But Fred Ghahramani, a technical services manager at First Data Corp.'s Card Services Group in Omaha, said he still wants more maturity from Windows NT.

"It's getting there," Ghahramani said. "The things that I don't see are performance tuning, capacity planning, things that are inherent with more robust older systems such as the MVS mainframes and AS/400s."

Microsoft's deals with Tandem Computers, Inc. in Cupertino, Calif., may help address clustering and fault-tolerance issues, Ghahramani said. But he said he still believes the platform is two to three years away from industrial-strength capabilities. □

ANNOUNCEMENT HIGHLIGHTS

- **NetShield Security Suite** – Antivirus product for Windows NT and NetWare servers
- **McAfee Enterprise** – Console to centrally manage installation and upgrade of antivirus applications across a network
- **A new technology** – Allows remote installation on Windows NT client system without giving the end user NT administrator access
- **WebWall** – Departmental firewall

McAfee pushes updates

CONTINUED FROM PAGE 47

ware on the latest threats and fixes.

The console was designed to ease a major administrative burden in the fight against viruses. Antivirus software was designed to thwart the time-consuming hassle of "cleaning" malicious code off desktop systems. But the task of keeping antivirus products up-to-date can become its burden, as virus data files must be continually changed to keep up with the latest threats.

NO CONTROL

Push is already used for automatic updates, but many administrators didn't want software moving from the Internet to end users without their being able to decide when and how desktops would be upgraded.

The console was one of several products announced by the Santa Clara, Calif., company. Another, a plan to offer a department-level firewall product, garnered mixed reviews among users and analysts who expect the company to have a hard time breaking into the hotly competitive arena.

"I would probably feel more comfortable buying one from a firewall company," said Scott Steen at Mastering Computers in Scottsdale, Ariz., who uses McAfee antivirus and remote access products. Although some software companies eventually offer good products in new markets, he said, "at the beginning, I would probably be a little skeptical."

"I don't think it's a huge market for them," said Rick Villars, an analyst at International Data Corp. in Framingham, Mass.

McAfee also announced NetShield Security Suite, which screens servers and network gateways for viruses.

Along with the desktop VirusScan, the network product comprises what the company calls Total Virus Defense Suite, priced at $23 per user for a 1,000-user site. □

NEW PRODUCTS

INFOSCAPE, INC. has announced Fresco 2.0, a development package for creating Java-based intranet database applications.

According to the San Francisco company, the software provides an intranet application server architecture that lets users develop complex transactional applications and control inserts, updates, deletes, rollbacks and commits. Fresco 2.0 applications can also be published to World Wide Web browsers or as channels on Marimba, Inc.'s Castanet.

The package includes two developer seats, one concurrent user server license and one database adapter for Oracle Corp., Sybase, Inc. or Open Database Connectivity products.

Fresco 2.0 costs $4,950.

Infoscape
(415) 442-5050
www.infoscape.com

DOCUMAGIX has announced Internet HotSuite, a collection of browser companion applications for Internet delivery and management.

According to the San Jose, Calif., company, HotSuite includes HotMap, HotCargo Express and HotPagePlus, three applications for World Wide Web site mapping, off-line browsing and localized personal content management. It works with Netscape Communications Corp.'s Navigator and Communicator products and Microsoft Corp.'s Internet Explorer.

Internet HotSuite costs $49.

DocuMagix
(408) 434-1138
www.documagix.com

VXTREME, INC. has announced Web Theater 2.2 to bring live and stored digital video to World Wide Web sites and intranets.

According to the Sunnyvale, Calif., company, the new version includes Web Theater Server, for streaming multimedia applications; Web Theater Producer, for capturing video, compressing it and authoring graphics; and Web Theater Client, a browser plug-in. Web Theater LiveStation can be purchased separately for streaming video of live events.

Web Theater 2.2 costs $995, and LiveStation costs $3,000.

Vxtreme
(408) 617-2330
www.vxtreme.com

CONTIGO SOFTWARE has announced Itinerary Web Presenter 2.0, a Java-based tool that enables live business presentations over the Internet.

According to the San Diego company, the software converts into Hypertext Markup Language any files created in Microsoft Corp.'s PowerPoint or Corel Corp.'s Corel 8. Once uploaded to a World Wide Web server, the presentations can be viewed online with a standard Web browser.

Users also can synchronize presentation of Web-enabled slides by remotely controlling the Web browsers of an audience via live hyperlinks.

One presenter and up to five remotely dispersed audience members costs $195.

Contigo Software
(619) 278-5900
www.contigo.com

'net snafus blank sites

CONTINUED FROM PAGE 47

name found its way onto the deletion list.

The first time Web Communications lost its Internet address, Network Solutions "gave me a clear reassurance that nothing would ever touch our domain name without us being contacted first," said Thomas Leavitt, a Web Communications vice president. "They're just systematically incapable of operating a service like this. It is absurd that they are the single point of failure for the [domain name system] for the entire Internet."

Leavitt decried the fact that Web Communications has no choice but to continue to depend on Network Solutions. "There is no alternative to the InterNIC. No matter how livid we are, we can't take our business elsewhere," he said.

One Internet observer said that although Network Solutions is handling the explosion of registrations fairly well, proposed competition in the Internet registration process could help it focus its efforts.

"You're always pushed harder by competition," said Martin Burack, executive director of The Internet Society, a nonprofit international group with more than 7,000 members. "Competition may help them hone their people and procedures. Competition is going to be better for [Network Solutions] in the long run whether they believe it or not." □

The Enterprise Network

LANs • WANs • Network Management

Briefs

7.9 Application performance (response time and throughput measurement)

7.1 Capacity planning (traffic projections)

6.3 Application makeup (traffic breakdown by application, protocol)

5.2 Accounting (resource utilization for analysis, chargeback)

NICK GOODLUCKHO

Chase's John McFadden: Knowledge management applications have reaped the bank $11M in revenue and reduced costs

Chase uses new apps to ID best customers

By Barb Cole-Gomolski

A LOT OF The Chase Manhattan Bank Corp.'s corporate customers call and ask to have processing fees waived or lowered. But waived fees is a special privilege the bank wants to reserve only for its best customers.

Because of an application based on a special class of groupware known as knowledge management, Chase now knows who its best customers are.

KNOWLEDGE MANAGEMENT

EASIER ACCESS

Knowledge management applications make a company's intellectual property available to workers through collaborative applications.

The goal is to avoid wasting time and money resolving business problems that already have been fixed and help workers make better — and more profitable — business decisions.

Using Chase's application, dubbed the Relationship Management System (RMS), bank employees can view customers' loan histories, deposits, investments and other information in real time using a Microsoft Corp. Visual Basic application.

RMS was built for the bank's Middle Market Banking Group, which serves companies that have annual revenue between $5 million and $500 million.

The information in RMS lets those bank employees — known as relationship managers — better serve customers and sell them more bank services.

"We realized that if we could information-enable the sales force, we could get better salespeople," said John McFadden,

Chase, page 50

Expectations overtake Gigabit Ethernet

By Bob Wallace

GIGABIT Ethernet is becoming a victim of its own popularity.

The upstart technology promises to supercharge Ethernet networks without requiring painful upgrades and retraining. But it is far from mature. And that has some users concerned.

"We're trying to put together a five-year plan including staff and infrastructure, and we need to know if we can use Gigabit Ethernet as our backbone network," said Steve Lopez, a network manager at The National Board of Medical Examiners in Philadelphia.

"We're still waiting on an [international] standard, which seems kind of late," Lopez said.

SWITCHING OPTIONS

Gigabit Ethernet is the highest-bandwidth option in a menu of Ethernet choices.

These include shared 10M bit/sec. or dedicated switched 10M bit/sec. Ethernet links at the desktop; 100M bit/sec. Fast Ethernet in the backbone; and Gigabit Ethernet on the horizon.

CLOSER LOOK Gigabit Ethernet

Gigabit Ethernet switches that are close to standard began trickling out earlier this year from vendors that promise those switches will be easily upgraded after the standard is set by the Institute of Electrical and Electronics Engineers, Inc., probably early next year.

Other vendors, including Cisco Systems, Inc., are waiting to ship products until the Gigabit Ethernet specification is final.

"We need Gigabit Ethernet to evolve some more before we can make any decisions on it, although we have to consider it in backbone network planning," said Ron Rimmer, a network manager at Wake For-

Hype, page 50

Acceleration software revs Web data

By Kim Girard

WEB-BASED DATA is cruising faster to remote access users with the help of new acceleration software.

In the past two weeks, Traveling Software, Inc. and Shiva Corp. have boosted their product offerings intended to improve speed and performance for the growing number of

Software, page 50

IS managers seek diagnostics for app health

By Patrick Dryden

IS MANAGERS are under pressure to keep the business healthy by ensuring robust application performance for users. Like physicians, they must choose their diagnostic tools carefully.

Several options can help them directly or indirectly measure the response time and overall performance of client/server applications. But each has its risks and rewards.

The most accurate method requires "invasive exploratory surgery" — inserting monitors into applications or clients to report actual performance, said Ray Paquet, an analyst at Gartner Group, Inc. in Stamford, Conn.

The alternative, Paquet said, is external analysis "such as an X ray" that doesn't touch the patient.

IS managers, page 52

Briefs

Timely net monitoring

Real-time network monitoring software from WheelGroup Corp. in San Antonio now works with a variety of network devices, including routers from Cisco Systems, Inc. Previous versions worked solely with products from Storage Technology Corp. and Nortel, Inc. WheelGroup's NetRanger 2.0 software can terminate 150 types of hacking attacks.

Printing Vines

Osicom Technologies, Inc.'s DPI Print Server Division in Santa Monica, Calif., has announced a new version of its NetPrint server that supports Banyan Systems, Inc.'s Vines and StreetTalk. NetPrint 4.0 users can send print requests from their desktops to e printer. Pricing is $299.

IS ranks application performance as highest monitoring need

(1 = unimportant to 10 = essential)

Rank	Type of monitoring
7.9	Application performance (response time and throughput measurement)
7.3	LAN flow (subnet-to-subnet traffic)
7.1	Capacity planning (traffic projections)
6.6	Baseline historical performance, trends
6.3	Application makeup (traffic breakdown by application, protocol)
6.3	End-to-end (network profile)
5.2	Accounting (resource utilization for analysis, chargeback)

Base: IS managers at 150 organizations

Source: McConnell Consulting, Inc., Boulder, Colo.

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IS managers, page 52

Hype overtakes Gigabit market

CONTINUED FROM PAGE 49

est University in Winston-Salem, N.C. "It's a factor we can't afford to ignore."

Gigabit Ethernet has been hyped as though Don King was its promoter. User expectations have grown faster than the available products. The current spec only lays out the technology needed to support Gigabit Ethernet speeds over fiber-optic cable. A spec for Gigabit over twisted-pair wire is at least a year away, analysts agreed.

Gigabit Ethernet products come in several forms, depending on where users need additional bandwidth. Uplinks tie Ethernet and Fast Ethernet switches to high-speed servers and data center resources.

There are two kinds of switches. The most common has many 10/100 ports that feed into a few Gigabit Ethernet ports that connect to the network backbone. Less common are switches that have only Gigabit Ethernet ports, which are used to tie together backbone switches and to switch huge data streams among servers in a server farm.

There is also a Gigabit Ethernet adapter card, which can be used in high-end workstations or to connect servers and switches.

GIGABIT ETHERNET VENDORS

Vendor	Product
Prominent Westboro, Mass.	Switches with some Gigabit Ethernet ports
Foundry Networks Sunnyvale, Calif.	Switches with some or all Gigabit Ethernet ports
Alteon Networks San Jose, Calif.	Switches and adapters
Extreme Networks Cupertino, Calif.	Switch with some Gigabit Ethernet porta
Rapid City Communications* Mountain View, Calif.	Switches with some or all Gigabit Ethernet ports
Nbase Communications Chatsworth, Calif.	Gigabit Ethernet switch

*Owned by Bay Networks

Although analysts expect Gigabit Ethernet prices to drop when vendors ship in volume, a port on a Gigabit Ethernet switch costs from $2,500 to $3,500 — the same price as a Gigabit Ethernet adapter card, analysts said. That is substantially more than Fast Ethernet but less than Asynchronous Transfer Mode (ATM).

"We're being very cautious about the standards situation"

Users like the technology because it is an extension of tried-and-true Ethernet and doesn't require information systems managers and staff to learn a new technology, such as ATM. But ATM has features that let IS manage bandwidth, while Gigabit Ethernet doesn't.

"Gigabit Ethernet is a solid alternative to ATM for a lot of companies because it doesn't require a big technology change and because ATM is overkill [with all its features]," said Virgil Palmer, director of telecommunications and networks at Air Products & Chemicals Corp. in Allentown, Pa., a Fast Ethernet user. Palmer said his company plans to start benchmarking Gigabit Ethernet equipment in October. "We're being very cautious about the standards situation," he said.

One concern is that the technology is coming from a sizable group of small start-ups.

"The industry consolidates on a weekly basis, and these companies will find it tough to compete with the billion-dollar companies when they start shipping," said Skip MacAskill, an analyst at Gartner Group, Inc., a research firm in Stamford, Conn. "It's a business decision, and you want a company that can provide service, support, maintenance and develop next-generation features for the equipment."

The consolidation already has begun.

Cisco Systems, Inc. last year bought Gigabit Ethernet start-up Granite Systems. And Bay Networks, Inc. several months ago bought Rapid City Communications, Inc. in Mountain View, Calif.

"Smaller companies get gobbled up. Because of that, I go with a major supplier," Lopez said.

Other start-ups include Extreme Networks, Inc. in Cupertino, Calif.; Prominent, Inc. in Westboro, Mass.; Foundry Networks, Inc. in Sunnyvale, Calif.; GigaLabs, Inc. in Sunnyvale; Packet Engines, Inc. in Spokane, Wash.; and Alteon Networks, Inc. in San Jose, Calif.

3Com Corp. became the first of the Big Four internetworking vendors to announce a Gigabit Ethernet product road map in April, with products due this year.

Cabletron Systems, Inc. also is shipping products. □

Gigabit resources

The Gigabit Ethernet Alliance (GEA), an industry association formed last year to drive the adoption of Gigabit Ethernet, last week announced a 10-city seminar series that will begin Wednesday in Seattle.

During the full-day seminar, GEA representatives will present information on how to evaluate and plan Gigabit Ethernet implementations.

Seminars will include a technology and market overview, examples of customer deployment and product displays from several vendors.

The association also formed the Gigabit Ethernet Consortium as a forum for testing Gigabit Ethernet products. Fifteen companies helped found the consortium.

Interoperability and conformity testing among consortium member company products will take place at the University of New Hampshire Interoperability Lab.

— Bob Wallace

Chase uses groupware to identify best customers

CONTINUED FROM PAGE 49

senior vice president of corporate systems.

"We used to call this class of application decision support," said Tom Koulopoulos, president of Delphi Consulting Group, Inc. in Boston. But decision support created an avalanche of reports with static, often unconnected data, he pointed out. Knowledge management applications create better links among the information pools a company already has, Koulopoulos said.

More than 2,500 Chase employees already use the knowledge management application. It eventually will be deployed on about 4,000 desktops.

TIME SAVINGS

Much of the data in RMS has actually been available to the managers all along, distributed monthly in 12-inch-thick reports. But the volume proved to be overwhelming and was out of date almost as soon as it was distributed.

More than a year after the $16 million system was deployed at Chase, McFadden estimated it has delivered at least $11 million in increased revenue and reduced costs.

Much of the financial gains can be attributed to productivity increases. Because they no longer waste time reading hard-copy reports, relationship managers can spend more time meeting with customers in person.

Though RMS brings together information stored in various mainframe databases and other operational systems, McFadden said it isn't a data warehousing application.

"We are enabling immediate access to live data," he said.

RMS also is different from a data warehouse because users can modify the information through integration with a Lotus Notes interface or pose questions to subject experts at the bank. □

Software pushes data into fast lane

CONTINUED FROM PAGE 49

remote users.

Shiva in Bedford, Mass., is upgrading its LANRover Access Switch software by adding World Wide Web acceleration technology called PowerSurf.

PowerSurf can be installed on the Shiva LANRover Remote Access switch at an Internet service provider or at a corporate site. It can reduce data transfer time by caching information from frequently viewed pages, anticipating user requests and making a second connection to a Web site as it downloads information from the first request.

"On some sites that were graphic intensive, [PowerSurf] really outperformed our old system," said Jeff Thompson, vice president of Edgenet Internet Services in Kingston, R.I. The company is testing the product before it installs PowerSurf to improve service to its 5,000 customers. "We used it on 28.8K bit/sec., and it looked like we were almost connected on an Ethernet port. With a 28.8K modem at a lot of the sites, it was at least twice as fast."

PowerSurf, which is due in November, will cost $5,000. It will be released with Shiva's LANRover Access Switch Operating System 5.2.

Traveling Software in Bothell, Wash., said its Remote Net-Accelerator can slash download times by up to 400% from servers that run Novell, Inc. NetWare and Microsoft Corp.'s, Windows NT. The product runs on both client and server.

Craig Miller, a technical support representative at Intermind Corp., a push-technology company in Seattle, uses Remote Net-Accelerator to quickly make changes to the company's Web site by downloading copies of Hypertext Transport Protocol files on his hard drive and editing from home. "It allows me to do quick changes that I wouldn't be able to do," he said.

Miller said by using Remote Net-Accelerator, he can keep all the information with him so he can avoid constant uploading.

Pricing for the Remote Net-Accelerator, which works with equipment from Cisco, Shiva and Ascend Communications, Inc., starts at $1,999 for the server software and 10 client licenses. □

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to know the world's security
is watching out for you.

IS managers seek diagnostics for app health

CONTINUED FROM PAGE 49

For accuracy, vendors such as Hewlett-Packard Co. and Tivoli Systems, Inc. and information systems groups at The Boeing Co. and Citicorp promote the Application Response Measurement (ARM) specification.

The ARM application programming interface defines a set of calls that developers can use to mark the start and stop of individual transactions for easy monitoring.

Also, the internet Engineering Task Force is adding complementary service-level objects to the management information base file it is developing for applications.

But few vendors have expressed interest in instrumenting their code, proponents and analysts said. In-house developers also are loath to mess with working applications.

That's the concern at American International Underwriters, a global insurer based in Livingston, N.J.

Mike Altiero, network services manager at the insurer, said modifying and retesting at least 200 critical applications would take too much time.

Tracking traffic across the network from external monitors makes more sense, he said.

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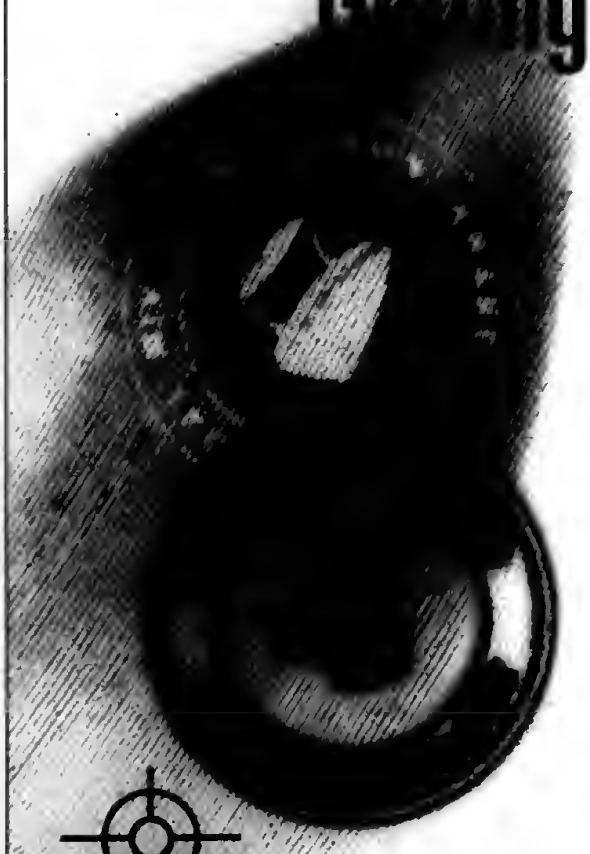

That's because on September 16th at IT Forum in New York, AIM Technology will announce the results of the Fall '97 AIM "Hot Iroo" Awards – featuring the hottest performing and best price/performing Servers and Workstations available running both UNIX and Microsoft Windows NT.

The AIM Hot Iroo Awards are based on tests conducted by AIM Technology using AIM's Server and Workstation benchmarks. These benchmarks feature AIM's proprietary Load/Mix Modeling technology to accurately and reliably model virtually any end-user application environment. AIM Benchmarks provide consumers with detailed results on system performance, capacity and total throughput across multiple architectures.

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CLIENT MONITORING

On the client front, vendors such as Candle Corp. now offer agents that monitor performace from each client, and Luminate Software Corp. provides a "drone client" that acts like a user to report performance from each site.

That direct measurement method bypasses the need to change existing applications, yet still provides accuracy.

For example, PCs in wiring closets throughout FileNet Corp. mimic local users to track performance of SAP R/3 applications.

"It's a simple and accurate way to do the job, with lower cost and maintenance than running an agent in each user station," said Mike McCoy, MIS director at FileNet in Costa Mesa, Calif.

For similar reasons, users such as Altiero prefer probes and software that measure performance indirectly.

Such tools examine application performance by measuring the travel of packets between clients and servers.

Vendors of such tools include BMC Software, Inc., Compuware Corp., Optimal Networks Corp. and Platinum Technology, Inc.

RMON 2

Also, vendors of second-generatioo, application-oriented Remote Monitoring (Rmoo 2) tools are adding performance measurement capability to their proprietary products.

NetScout Systems, Inc. has proposed an extension to the Rmon a standard — backed by seven other vendors — that measures response times through existing data tables.

External analysis measures only relative round-trip delay, not the actual response time, analysts said. But that information may suffice, because both risk and cost are low. "Maybe you don't need to be so accurate, just know whether your application performance is weak or strong," Paquet said.

Indirect network-based measurement and direct application-based measurement are complementary, not exclusive.

For example, probes currently watch existing applications flow across the network at Charles Schwab & Co., and developers are starting to instrument new applications, said Richard Weiss, architect for enterprise management systems at Schwab in San Francisco.

Existing code won't have to be rewritten to make more direct measurements, Weiss said, because small modules containing response-time calls can be added to take their pulse. □

Software

Databases • Development • Operating Systems

Briefs

Consultants roll out prepackaged apps

▸ *Generic client/server programs can cut fees*

By Randy Weston

CLIENT/SERVER application implementations don't have to take a year and cost millions in consulting fees, if you are willing to trust that your consulting firm knows what's best for you.

Leading consulting firms and some applications vendors are launching programs designed to quickly install systems such as SAP AG's R/3 based on preset business processes.

First out of the gate is KPMG Peat Marwick LLP.

Silicon Gaming's Tom Carlson: The company saved two-thirds of consulting costs with KPMG templates

The New York-based implementation company is launching several programs to preconfigure large enterprise resource planning software systems for specific industries.

"As a rule of thumb, 80% of business processes are generic, like fixed assets or industry-specific processes," said Michael Herzog, director of KPMG's packaged integration consulting group. "We are saying, 'Let's get all that easy stuff done ahead of time.' And then in most cases the last 10% to 20% needs to be customized for the customer."

So far, KPMG has programs for SAP and Oracle Corp. in the high-tech industries and The Baan Co. for first- and second-tier suppliers for the automobile industry.

SAP and Oracle also have launched their own programs based on a similar premise, and many consulting firms are likely to follow suit, analysts said.

Many of the processes developed for those industries can be transferred to other industries with little or no modification, because some core processes remain the same, Herzog said.

"We can get the consulting costs down from somewhere between $1 million to $2 million to $600,000 to $1 million," he said.

Joshua Greenbaum, an analyst at Hurwitz Group, Inc. in Newton, Mass., said those types of programs are in demand. Small and midsize companies will likely benefit as they get their enterprise resource plan-

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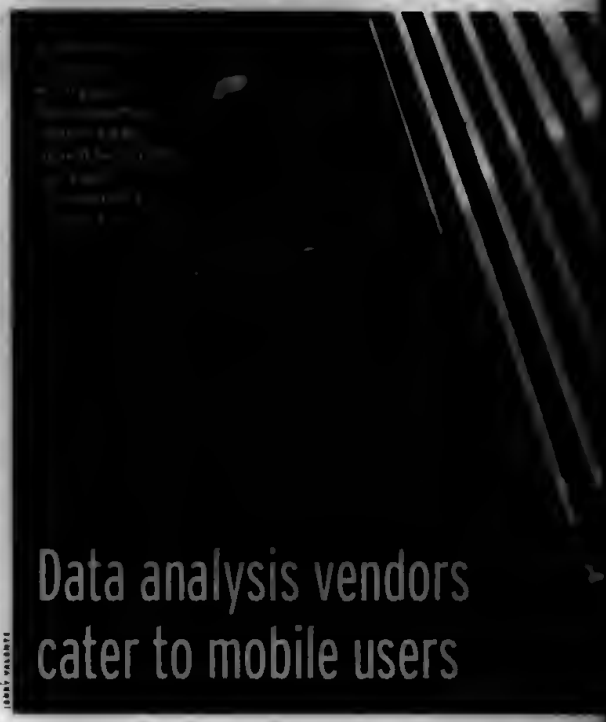

By Craig Stedman

DESKTOP DECISION-SUPPORT vendors have had to change their spots and become more server-oriented because of the Internet. Now a growing number of server-based data analysis companies are doing the same thing in reverse.

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Data, page 56

Java Blend to ease database access

By Sharon Gaudin
NEW YORK

SUN MICROSYSTEMS, INC. is brewing up a technology designed to create faster and easier access to information spread out across myriad database servers.

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Java Blend lets Java applications retrieve and capture information off disparate databases without using any database code or plumbing. Sun last week announced the product at the Java Internet Business Expo in New York.

"Anything that makes it easier to create ... object-oriented applications is goodness."
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Java Blend, which will begin shipping early next year, was de-

Java Blend, page 56

Briefs

SAP-ping Web access

At last week's Sapphire conference in Orlando, Fla., New York-based Information Builders, Inc. announced a version of its Snappack SmartMart software that can build data marts from SAP AG R/3 applications. SmartMart for R/3 has connections to SAP's data dictionary and was designed to feed updates and other changes directly into a data mart. The software costs $128,000. It will ship in the fourth quarter.

Java spills on big iron

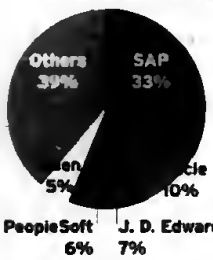
Blue Lobster, Inc. in Rochester, N.Y., last week announced its Stingray mainframe access software developer kit, written entirely in Java. Stingray lets users create Java applets and applications that can build 3270 emulation screens within Java clients. Stingray is shipping now and costs $795. Runtime licenses cost $50.

NT gateway

Intergraph Corp. in Huntsville, Ala., has announced Access-NFS Gateway for Windows NT. Corporations can use it to give users of Windows-based systems access to Network File System (NFS) files and print resources without having to install NFS client software on every desktop. Companies can purchase concurrent user licenses to give access to NFS services for as many Windows users as required. Pricing starts at $2,500 for a five-user license.

Projected 1997 enterprise resource planning market

Total market: $9.6 billion



Source: Advanced Manufacturing Research, Inc., Boston

Consultants roll out prepackaged apps

▸ *Generic client/server programs can cut fees*

By Randy Weston

CLIENT/SERVER application implementations don't have to take a year and cost millions in consulting fees, if you are willing to trust that your consulting firm knows what's best for you.

Leading consulting firms and some applications vendors are launching programs designed to quickly install systems such as SAP AG's R/3 based on preset business processes.

First out of the gate is KPMG Peat Marwick LLP.

The New York-based implementation company is launching several programs to preconfigure large enterprise resource planning software systems for specific industries.

Silicon Gaming's Tom Carlson: The company saved two-thirds of consulting costs with KPMG templates

"As a rule of thumb, 80% of business processes are generic, like fixed-assets or industry-specific processes," said Michael Herzog, director of KPMG's packaged integration consulting group. "We are saying, 'Let's get all that easy stuff done ahead of time.' And then in most cases the last 10% to 20% needs to be customized for the customer."

So far, KPMG has programs for SAP and Oracle Corp. in the high-tech industries and The Baan Co. for first- and second-tier suppliers for the automobile industry.

SAP and Oracle also have launched their own programs based on a similar premise, and many consulting firms are likely to follow suit, analysts said.

Many of the processes developed for those industries can be transferred to other industries with little or no modification, because some core processes remain the same, Herzog said.

"We can get the consulting costs down from somewhere between $1 million to $2 million to $600,000 to $1 million," he said.

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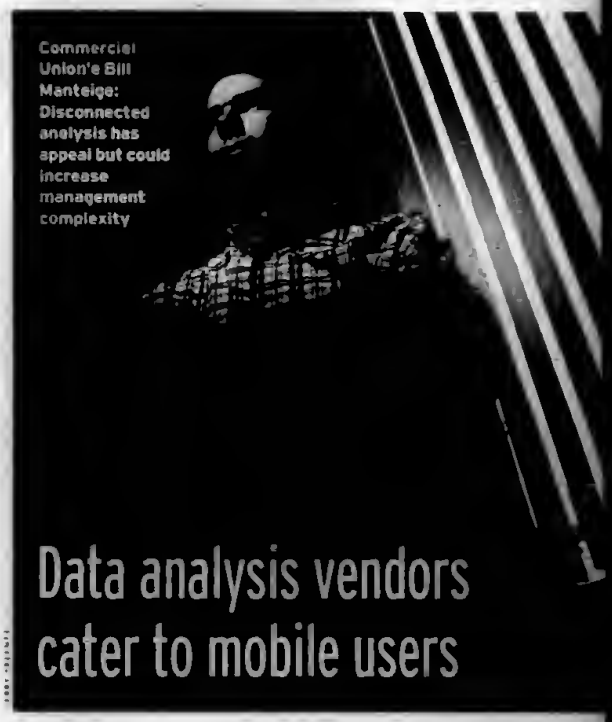

Commercial Union's Bill Manteige: Disconnected analysis has appeal but could increase management complexity

Data analysis vendors cater to mobile users

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Java Blend, page 56

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Data analysis vendors cater to mobile users

CONTINUED FROM PAGE 53

Suite in the fourth quarter, and Information Advantage also will resell the $395 Brio.Insight client.

Microstrategy, Inc. in Vienna, Va., said similar support for "one-tier mode" analysis is being built in to an upgrade of its DSS Server, which is due to be released this fall.

Users will be able to download subsets of data to Microstrategy's client software and then detach from the server. The company's administration tool will get support for scheduling regular downloads from a central point.

Oracle Corp. in Redwood Shores, Calif., and Arbor Software Corp. in Sunnyvale, Calif., already cater to roving laptop toters with their server-based analysis tools. Support for disconnected analysis closes the gap with desktop tools on end-user functionality, which has been a big weak spot for server vendors (see chart below).

TELECOMMUTER APPEAL

Bill Manteiga, data warehouse director at Commercial Union Insurance Co. in Boston, said disconnected analysis has potential appeal "as we have more people working at home."

The ability to centrally push slices of data out to users also could make it easier for business analysts to get at the information they need, said Manteiga, who is a Microstrategy customer.

But distributing different chunks of data to users could complicate the task of making sure everyone is working with up-to-date information, Manteiga said. Commercial Union's users also might have to download "an awful lot of data" to support the wide-ranging queries they run, he said.

Users won't be able to download enough data to give them open-ended querying capabilities, said John Williams, a data warehousing consultant at Computer Sciences Corp. in El Segundo, Calif. But most salespeople and senior executives have limited querying needs, said Williams, who is looking at Microstrategy's disconnected capabilities for an upcoming analysis service geared to pharmaceutical companies. □

Java Blend to ease database access

CONTINUED FROM PAGE 53

signed to make it easier to build applications that can access any database.

It sits between business applications and databases, and translates the requests from the applications to SQL and other database interface formats.

That means business developers can create applications in Java with a generic set of database calls without having to worry about which database the applications will use.

GOOD FOR OBJECT DATABASES

Karen Boucher, director at The Standish Group International, Inc. in Dennis, Mass., said Java Blend should help companies moving to or contemplating a move to an object database, because it will affect the way object-oriented applications communicate with databases without actually changing the databases.

"It makes it easier for developers, so they don't have to spend so much time creating data objects to connect with their own databases," Boucher explained.

"This way, Java Blend takes care of that, and the developer doesn't have to worry about it," she said. "Anything that makes it easier to create and operate object-oriented applications is goodness." □

DESKTOP VS. SERVER FOR DECISION SUPPORT

	Pro	Con
Desktop tools	• Inexpensive • Easy to learn and use	• Limited scaling on queries • Focused on single users
Server-based tools	• High-speed and scalable • Easily adapted to the Web	• Less functional GUIs • Expensive

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Consultants roll out ready-made apps

CONTINUED FROM PAGE 53

ning systems installed quickly. But Greenbaum said users need to be cautious about how much they trust someone else's plan, because that plan likely will be sold to competitors.

"One of the results of these types of implementations is they tend to be very standard and very vanilla," Greenbaum said. "You are not going to get any of the strategic advantage you would get with a more customized approach."

"One of the results of these types of implementations is that they tend to be very standard and very vanilla"

Greenbaum said users should be very clear about their current business processes, or they should start from scratch before going with such a packaged approach.

NO PROCESSES

Start-up video slot machine and casino game maker Silicon Gaming, Inc. in Palo Alto, Calif., barely had any sales or business processes in place when it turned to KPMG for help.

The company, which has just received clearance to begin selling its product in Nevada casinos, wanted to start the sales ball rolling with an integrated information system — specifically Oracle's application package.

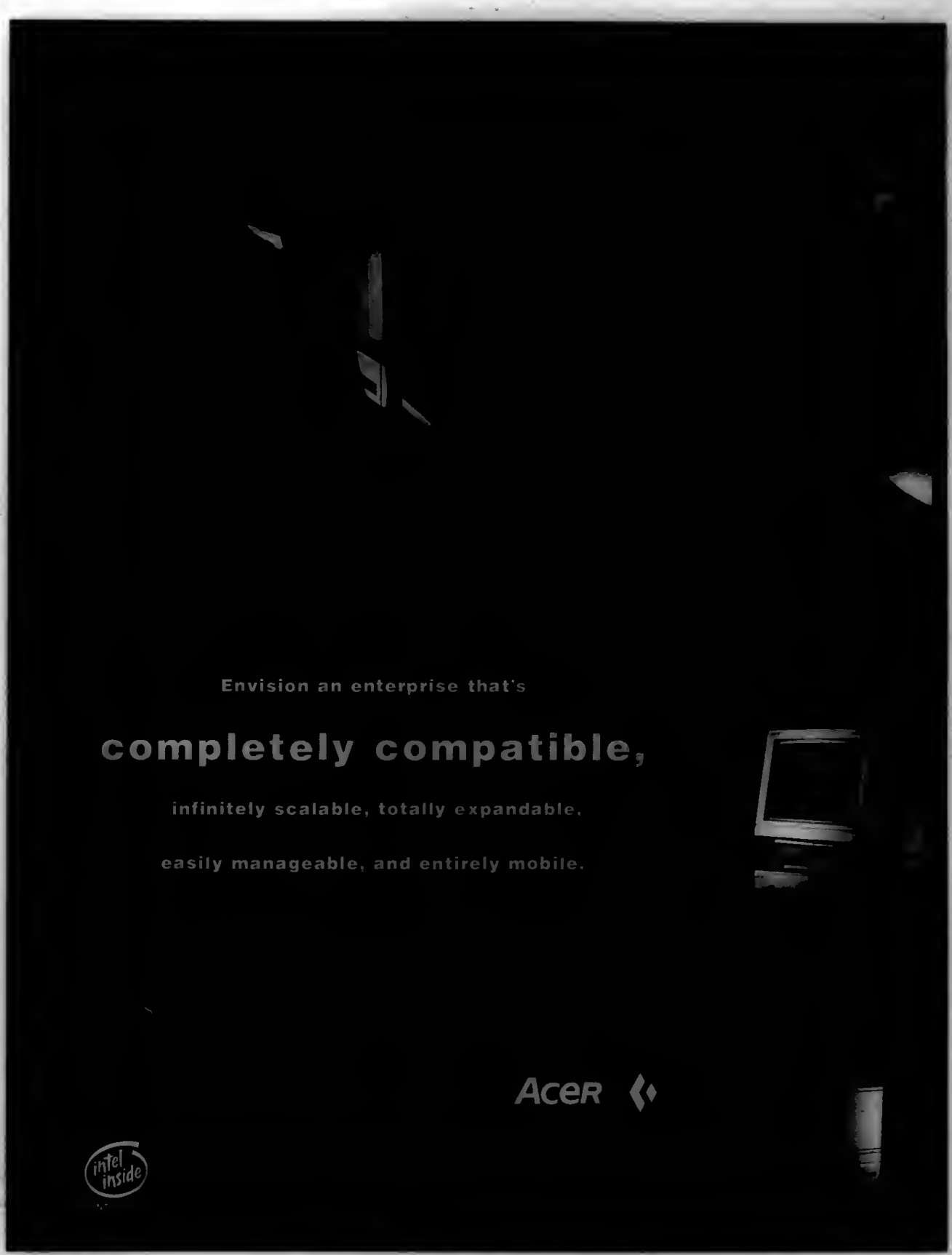
"KPMG came with templates that were best-of-breed business practices," said Tom Carlson, chief financial officer at Silicon Gaming. "We could adopt the business processes as a way to do business and cut down the need to do customization and the time involved in implementing."

But he said the processes weren't adopted without careful evaluation.

Areas such as general ledger accounting were easy to take from KPMG. But given the highly regulatory nature of the gambling industry, Silicon Gaming needed to custom-design the processes surrounding its manufacturing.

"We had about a 75% fit," Carlson said. But he said the company saved nearly two-thirds of the consulting costs by taking prefabricated templates from KPMG.

As a result, the company cut down a one-year implementation schedule to four months, and the project came in at the $2 million budget. □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Briefs

DATA CENTER ENVIRONMENTAL COSTS

Item	Cost per square foot per year
Floor space	$300
[illegible]	[illegible]
Mechanical (heating and cooling duct systems)*	$11
[illegible]	[illegible]
Security	$2.75

NICK CARDILICCHIO

Web sites learn beauty of storage

By Tim Ouellette

STORAGE IS BECOMING MORE than a box that sits in the corner.

Users are starting to turn to vendors to manage many storage problems, such as hosting World Wide Web sites, as well as provide hardware.

Vendors are now creating customized storage "complexes" for specific uses and hosting data themselves.

For example, Eastman Kodak Co. asked IBM to design a special storage configuration for its Kodak Picture Network, a Web-based picture service that the Rochester, N.Y., photo giant unveiled last week.

And EMC Corp. has brought its Web Site Management Service, based on farms of Symmetrix disk arrays located at its Hopkinton, Mass., headquarters, into full swing since announcing it last spring [CW, March 31]. The service will host Web sites and provide Internet access to those sites for a client, but the client is responsible for developing the actual site content.

CREATIVE OFFERINGS

Besides Web hosting, "EMC does data refreshes and tape uploads. It is more than just making sure the power is on and the fans are running," said Jim Longo, director of information systems at Matthew Bender & Co., a New York legal research firm that subscribes to EMC's service.

Analysts expect to see more of these creative offerings as storage vendors get their feet

Storage, page 60

Data delivery dilemma

▸ *Users urge better access to corporate data*

By Tim Ouellette

A GROUP OF users is challenging storage vendors to make corporate data as accessible as a telephone's dial tone.

The users, part of Share, Inc., a 2,200-member large-systems user group based in Chicago, want vendors to smooth the bumps that keep data from flowing freely between today's disk and tape systems and backup, recovery, archiving and other storage management software tools.

"The various storage products today only address little pieces of the problem. So we are getting locked in to proprietary products to solve a wide-ranging data access problem," said Linnea Nichols, a data center branch manager for the county of Fairfax, Va., who also heads up Share's storage management steering committee.

Users want business needs to drive storage instead of technology considerations.

The committee has proposed developing a storage facility, probably a service bureau with products from many vendors, called a Data Delivery Utility (DDU). The ODU would let users access data stored on any platform from any client platform, hide the complexities of the transfer between different systems and be available at all times without requiring downtime for maintenance, data migrations or upgrades (see chart).

The committee, made up of users from companies such as Texaco Corp., US Airways and National Westminster Bank PLC, presented the paper at last month's Share conference. Members gave it positive reviews in written surveys, opening up the possibility that Share officials will support the concept by adding it to the list of requirements and strategic directions they present to large-systems vendors every year.

IBM officials had already been briefed on the DDU and recommended that more vendors see what Share wants, because no vendor can pull it off alone.

Other vendors that could follow through on the DDU include hardware vendors such as EMC Corp. in Hopkinton, Mass., along with Sun Microsystems, Inc. and storage software providers such as Legato Systems, Inc. in Palo Alto, Calif., and Cheyenne in Roslyn Heights, N.Y., a division of Computer Associates Interna-

Data delivery, page 60

TURN ON THE POWER

Share's ideal Data Delivery Utility would be:

- Usable across all platforms
- Transparently accessible
- Resilient to network problems and disasters
- Manageable without in-depth technical training
- Able to dynamically satisfy changing business process needs

Source: Share, Inc., Chicago

Help on horizon for NT network disk monitoring

By Nancy Dillon

HIGHGROUND SYSTEMS, INC. has announced two first-generation products designed to ease the pains of network disk monitoring and backup recovery for Windows NT administrators.

The first product, Storage Resource Manager (SRM), gives NT 4.0 and Windows 3.1.5 users the ability to view properties of their storage network through a centralized, World Wide Web-based front end. Users can monitor free space, space used, file aging statistics, disk defects and basic trend lines for capacity planning.

This first version of SRM provides a view into online magnetic storage "only. Bulk media, robotic libraries, tape and optical storage won't show up in the viewer until Windows NT 5.0 is released sometime next year. NT 5.0 will incorporate an application program-

Help, page 60

Servers & PCs

Large Systems • Workstations • Portable Computing

Briefs

New chips spawn PCs

Dell Computer Corp., Gateway 2000, Inc. and other PC vendors last week introduced new Intel Corp. Pentium II-based computers that feature improved graphics capabilities. Analysts said corporate users who use World Wide Web authoring tools, low-end computer-aided design and video editing software will benefit from the technology, but the chip set is aimed mostly at consumers who want better video game graphics.

PC "whiteboard"

Methuen, Mass.-based MicroTouch Systems, Inc. is shipping two conference-room-size versions of its Ibid PC Whiteboard. The Ibid 300 and 400 are 3 ft. high and 4 ft. high, respectively. The whiteboards connect to a PC and record everything that is written on them to the PC in real time. The Ibid 300 costs $999; the Ibid 400 costs $1,349.

DATA CENTER ENVIRONMENTAL COSTS

In addition to labor, hardware and software costs, IS also must consider data center costs

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Floor space	$300
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Fire detection and suppression	$5.50
Security	$2.75

*Power and cooling cost vary; the average is about 10 cents per kilowatt hour. A large disk array might cost up to $13,000 per year.

Source: Gartner Group, Inc., Stamford, Conn.

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Storage service offerings

CONTINUED FROM PAGE 59

wet testing how Internet-based commerce will affect storage demand. And because major storage players already have a presence in the data center, it may be an easy step for users to ask for their assistance.

"For EMC, it is something that is more of a laboratory," said John Webster, an analyst at The Yankee Group in Boston. "Vendors want to know what happens to the demand for storage if you put up specific kinds of applications available over the Web."

MORE USER REQUESTS

IBM storage division officials said they are beginning to field more requests to develop storage configurations for specific user problems instead of just selling users storage hardware and software.

That means users can put the dirty work of handling storage problems into the hands of vendors that have been tackling the task for a long time.

At Matthew Bender, Longo uses EMC's hosting service to deliver its legal archives to Web-based users. About 85G bytes of Matthew Bender's Moseby catalogs of court cases are stored at EMC, Longo said.

In Kodak's case, the company wanted to keep the storage onsite as it worked the kinks out of the Picture Network. The service will let users access digital pictures on personalized Web pages, where they can order enlargements, decide what photos they want developed and share pictures with distant friends and family.

But the company wanted someone who had a long history of managing high-end storage to design its storage environment for the Picture Network project.

"The selection of IBM to build this customized storage system was based on its history of building sophisticated storage systems in the mainframe world," said Wes Micket, operations manager for networked services at Kodak.

While EMC and IBM pave the way, few other storage vendors have jumped to provide Web-based storage services or custom installations. But analysts expect more announcements over the next year as user demand for storage moves out of corporate networks and onto the Internet.□

NEW PRODUCTS

WEDGE TECHNOLOGY, INC. has announced the ShowBiz-9000, a multimedia notebook PC with an LCD screen that converts to an overhead projection panel.

The Milpitas, Calif., company said users can remove the LCD's enclosure and set it flat on an overhead projector to create still images on a screen or wall up to six feet high.

The price is $3,700.
Wedge Technology
(408) 263-9888
www.wedgetech.com

PROCOM TECHNOLOGY, INC. has announced a 12.7mm, 3G-byte hard drive for laptop computers.

The Irvine, Calif., firm said the hard drive is compatible with small notebooks made by several manufacturers. The Plug and Play 3G-byte drive, a member of Procom's series of hard drives, was designed to provide an average seek time of 13 msec.

Pricing for the hard drive starts at $1,075.
Procom Technology
(714) 852-1000
www.procom.com

SEANIX TECHNOLOGY has announced Baby Grand, a fully configured minitower PC with a 166-MHz MMX Pentium processor.

According to the Sioux City, Iowa, company, Baby Grand comes with a 14-in. monitor, a 1.6G-byte hard drive, 16M bytes of memory and an eight-speed CD-ROM drive. Buyers also will have a choice between a 33.6K bit/ sec. fax modem or a 3Com Corp. Ethernet card.

Seanix's Baby Grand costs $999.
Seanix Technology
(800) 555-4031
www.seanix.com

MICRO DESIGN INTERNATIONAL, INC. has announced SCSI Express CD16X, a 16-speed CD-ROM drive.

According to the Winter Park, Fla., company, the SCSI Express CD16X has a SCSI-2 interface and a data-transfer rate of 2.4M bit/sec. Micro Design's SCSI Express software also is available for network sharing of the drive in Windows NT and NetWare environments.

Pricing starts at $330.
Micro Design International
(407) 677-8333
www.mdi.com

ROLAND DIGITAL GROUP AMERICA has announced Picza 3-D Digitizing Scanner, which automatically produces digitized models of three-dimensional objects.

The Irvine, Calif., firm said the scanner uses probe technology from Piezo Technology, Inc. No manual intervention or tracing of the object by hand is required. The object is defined by length, width and height based on user input. Picza sets those coordinates in space and transmits the information to an automatic probe that scans the object from end to end. A wireframe 3-D model is created that can be exported to a design program for animation or other changes.

Picza costs $1,195.
Roland Digital Group America
(714) 727-2100
www.rolanddga.com

ATL PRODUCTS, INC. has announced the P1000 Series, digital linear tape libraries with 16- or 30-cartridge slots and 2.1T bytes of capacity.

The Irvine, Calif., company said the libraries include a Peripheral Component Interconnect (PCI) expansion bus that will support fibre channel host adapters, Ethernet network adapters or PCI single board computers that can be used as backup servers. Library management is controlled via a touch-screen control panel that has a graphical user interface. Prices start at $25,000.
ATL Products
(714) 774-6900
www.atlp.com

Help on horizon for disk monitoring

CONTINUED FROM PAGE 59

ming interface (API) called NT Media Services (NTMS), which will allow applications to share devices and enable SRM to see inside larger libraries. HighGround and Microsoft Corp. are jointly developing the API.

Gregory Hurst, a systems analyst at Century Technologies, Inc. in Silver Springs, Md., said SRM is a significant time-saver.

"Before I received my evaluation copy of Storage Resource Manager, if I wanted to get a handle on my disk usage, I had to reach each directory user-by-user, list out its statistics and use a DOS utility to get the information all in one place," said Hurst, who is working with the state of Ohio on a project to digitize food stamps. Hurst said he saves about four hours per week using the tool.

FUTURE CONTENDER

Mark Nicolett, a storage analyst at Gartner Group, Inc., said Boxboro, Mass.-based HighGround is using the introduction of SRM to gain a foothold in small to medium-size businesses and position itself as a contender for the enterprise.

"Since SRM is a Microsoft management console snap-in, the interface is more in line with what an average NT administrator is used to," Nicolett said. "Full functionality for the product may be 18 months away, however, so it is not a full-fledged competitor right now with more mature products like Sterling Software's SAMS:Vantage."

Peter Bedell, director of information systems for a United Healthcare, Inc. site in Westboro, Mass., said he needed SRM to add more storage to his NT network without adding more administrators. "It's hard for remote sites with only 30 people to justify expanding support staff. Now that I am using Storage Resource Manager, I expect to be able to expand my 10G bytes of storage and my number of machines without having to get new people or ask for overtime work," Bedell said.

The second product from HighGround is a fault-tolerant backup and recovery application for tape storage called Media Mirror 1.0. The software allows users to simultaneously create media replicas during normal backup operations using standard tape drives. "With Media Mirror, HighGround is releasing function ahead of NTMS, and later they'll go back and make it into an NTMS extension," Nicolett said.

Both products are expected to be available Oct. 1. SRM will cost $3,995 per server license, $99 per NT workstation agent and $399 per NT server agent. Media Mirror will cost $995.□

Data delivery dilemma

CONTINUED FROM PAGE 59

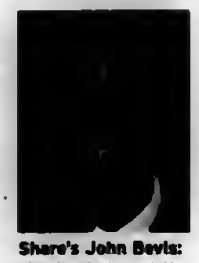
tional, Inc.

"We've had some major task force reports over the years like this," said John Bevis, president of Share and a manager at the University of Florida's Northeast Regional Data Center in Gainesville.

"Trying to get the industry to go in the direction our users need to go is one of our primary missions," he said.

But one storage vendor representative who was at the presentation said vendors would have to "violate the laws of physics to comply with the demanding requirements of a DDU."

Committee member Scott Cumbie, a storage administrator at US Airways in Winston-Salem, N.C., acknowledged that the paper was less a specific request than a strategic direction for future data access needs.



Share's John Bevis: Mission is to get the industry moving with users

"We wanted to set a vision, not a list of requirements," he said.

"This is kind of pie-in-the-sky stuff, and we realize that," Nichols said. "But we as customers must take these concerns to vendors to say we need this."□

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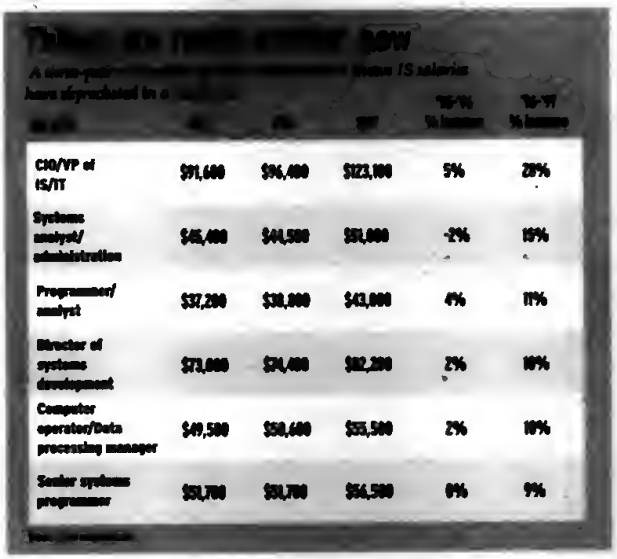
Computerworld's 11th ANNUAL SALARY SURVEY



CIO/VP of IS/IT	$91,600	$96,400	$123,100	5%	28%
Systems analyst/ administration	$45,400	$49,500	$51,000	-2%	15%
Programmer/ analyst	$37,200	$38,000	$43,000	4%	11%
Director of systems development	$73,000	$74,400	$82,200	2%	10%
Computer operator/Data processing manager	$49,500	$50,600	$55,500	2%	10%
Senior systems programmer	$51,700	$51,700	$56,500	0%	9%

By Kathleen Melymuka

This year, the skills gap paid off. After years of settling for crumbs while the guys on top got big pieces of the pie, information systems professionals across the board are finally in the money. Eleven of 26 positions surveyed in *Computerworld*'s Annual Salary Survey reported average increases of 10% or more, and only five positions received less than 5% increases.

The big winners were the up-and-comers: systems analysts got bigger percentage raises than senior systems analysts, and systems programmers beat out senior systems programmers for percentage raises. Similarly, programmer/analysts edged out senior programmer/analysts, and database analysts beat database managers in terms of percentage increases.

Bigger raises in the lower ranks is likely a reflection of the premiums being paid for newer technology skills.

"Senior systems analysts and programmers tend to be old-school types doing Cobol and mainframes," says David W. Markle, manager of information technology at AlliedSignal, Inc. in Colorado Springs. "The cutting-edge technology on the application development side today is Microsoft [Visual Basic], C++ [and] Java, and the younger generation tends to have a better handle on that."

Speaking of hot skills, webmasters and managers of Internet/intranet technology made the survey for the first time this year, and both are highly compensated, no doubt because they're in great demand.

"Web skills are hardest to find," says Jim Stewart, vice president of IS at Duff & Phelps Credit Rating Co. in Chicago. "We just hired a new webmaster, and it was one of the most difficult job searches I've ever done."

As usual, chief information officers got a huge piece of the

How green is my salary?

Salary expectations are very [illegible] as major city markets compete [illegible]

JOB TITLE	10TH PERCENTILE	25TH	50TH	75TH	90TH	95TH	99TH
CIO/VP of IS/IT	$90,000	$66,000	$117,000	$169,000	$252,000	$323,000	$323,000
Director of systems development	$82,000	$52,000	$79,000	$98,000	$116,000	$73,000	$82,000
Network administrator/ analyst	$52,000	$43,000	$48,000	$65,000	$48,000	$48,000	$47,000
Senior systems analyst	$78,000	$52,000	$57,000	$73,000	$78,000	$53,000	$56,000
Senior programmer/ analyst	$62,000	$49,000	$54,000	$58,000	$66,000	$58,000	$53,000
Programmer/ analyst	$57,000	$40,000	$44,000	$50,000	$50,000	$39,000	$43,000

[illegible] compensation

CIOs are raking in 28% more cash than a year ago. Nearly half of IS jobs are pocketing an extra 10%. Is this a great field, or what?

pie: Their total compensation increases averaged 28%. But within that average, raises varied wildly. In the insurance industry, CIO salaries hardly changed; in business services/IS, CIOs averaged an incredible 60% salary increase; and in transportation, CIO salaries were down 19%.

CIOs took a big wedge, but the whole pie was clearly much larger — big enough to provide double-digit increases for managers of voice/data communications, systems analysts, communications specialists, systems programmers, LAN managers, project managers, programmer/analysts and computer operations managers.

Salaries rose an average of 10% at Duff & Phelps. "The networking and the Internet side are where the biggest jumps come from," Stewart says. "It's just a supply and demand kind of thing."

Hiring new people at better salaries affects the entire salary structure, Stewart says. "It puts more pressure on people to just not stay static. It seems that the way people are making money is by jumping jobs."

Stewart tries to head them off by balancing the pay structure at the end of each year. "We try to do justice," he says. "We give bonuses and raises to keep people from leaving."

The pressure of rising salaries pushes CIOs to save money elsewhere, so they try to develop economical, high-impact applications, says Bob Nixon, director of information services at Jantzen, Inc., an apparel manufacturer in Portland, Ore. "The company says, 'We're spending all this money on IS. Is it worthwhile?' That's the challenge, to say, 'It's worthwhile, and here's why.'"

Client/server technology is the answer, Nixon says. "Where we can provide the best benefit is in applications that are taking data off the mainframe and presenting sales information online to managers and executives in real time so they can see trends developing early on." But ironically, moving to client/server applications increases demand for newer skills. In Nixon's case, it's SAP skills. And that pushes salaries higher. Few would deny that the high salaries are deserved, because nearly everyone is overworked — another reason salaries are spiraling upward.

"It gets harder every year," Stewart says. "We can't hire as many as we need, so each person has more on his plate. So we have to compensate for that. We try to hold the overtime down, but everybody has the feeling that we're kind of drowning."

The relationship between salaries and turnover rates bears this out. Salaries in the manufacturing industries average higher across the board than those in nonmanufacturing industries, but the average manufacturing turnover rate also is higher. In fact, one of the highest turnover rates is found in computer hardware, software and peripherals, which also pays among the top salaries in systems development and technical areas.

Markle says the high rate reflects both sides of the turnover issue — employees being let go and others jumping jobs. "Today's tech world is super cutting edge," he says. "People are looking for the sharpest, fastest-growing individuals for the team, and there's a direct correlation [between high salary and high turnover] because people can't hack it. On the other side, when you are good, you're good, and you're going to get a lot of offers."

Turnover brings about raiding, particularly by consulting and contracting firms. "In the last year or two, [raids] on internal IT staffs have been escalating," says Eric Schrumm, director of information technology at Rayonier, Inc., a wood and paper products company in Stamford, Conn. "We're in the process of reviewing our salary structure with an eye toward making sure we're competitive."

But that isn't always possible. "There's a big difference between a corporation whose revenue base is not coming from IS and a consultancy, which is IS," Stewart says. "We know we can't compete on salaries. The way we try to combat that is offering people a good workplace and a variety of projects. Everyone here gets to be a micromanager and have a lot of autonomy, and that's really key for IS people these days. We have a very low turnover rate, so I guess it's working."

Another way to reward people without throwing the salary structure out of whack is to give bonuses. The survey found that big companies were more likely than small companies to give bonuses, and the bonuses were more likely to be larger. Bonuses based on company performance were the most common, followed by individual performance bonuses.

Looking ahead, Nixon says he'll probably have to raise his employees' salaries about 5% over the next six months to keep pace with new recruits. But he says he'll try to offset those costs in other areas. "I do what I can to keep costs down," he says. "In the back of my mind I always have to be thinking, 'What if the company decided to outsource IS?' So you think about how to provide better service and response than an outside service could. It's a balancing act." □

Melymuka is a freelance writer in Duxbury, Mass.

ILLUSTRATIONS BY MARK STEADMAN

It's good to be king

Top IS jobs reap the largest additional compensation (bonuses)

JOB TITLE	BONUSES AMOUNT	% OF TOTAL COMPENSATION
CIO/VP of IS/IT	$22,000	19%
Director of systems development	$8,900	11%
Director of IS operations	$7,000	11%
Director of IS/MIS	$8,000	10%
Director of networks	$7,400	10%
Project manager, systems and programming	$6,300	9%

[illegible] compensation

New pieces to the puzzle

In the past year, four IS positions (listed here) with nontraditional jobs that are able to command sizable paychecks

JOB TITLE		INDUSTRY, BUSINESS FUNCTION
Director of IS/MIS	$80,300	Business services, IS
Project leader	$62,400	Metal/Plastic/ Rubber manufacturing
Manager of Internet/Intranet technology	$61,100	Business services, IS
Webmaster/ Web designer	$50,600	Business services, IS

Computerworld's 11th ANNUAL SALARY SURVEY

CIO/VP of IS	Director of systems development	Director of IS/MIS	Director of networks	Director of IS operations	Manager of voice/data communications	LAN manager	Network administrator	Client/server project manager, systems and programming	Mainframe project manager, systems and programming
Average: $108,306 Bonus: $22,771 Total: $123,077	Average: $73,290 Bonus: $8,906 Total: $82,196	Average: $72,260 Bonus: $8,121 Total: $80,381	Average: $66,873 Bonus: $7,422 Total: $74,295	Average: $64,981 Bonus: $7,848 Total: $72,829	Average: $59,972 Bonus: $5,880 Total: $65,852	Average: $49,135 Bonus: $3,464 Total: $52,599	Average: $44,733 Bonus: $2,683 Total: $47,416	Average: $60,497 Bonus: $6,257 Total: $66,754	Average: $56,890 Bonus: $5,516 Total: $62,406
INDUSTRY, BUSINESS FUNCTION					**INDUSTRY, BUSINESS FUNCTION**			**INDUSTRY, BUSINESS FUNCTION**	
Bus. Svc., IS $220,600	Banking $115,783	Banking $114,000	Bus. Svc., IS $116,500	Bus. Svc., IS $106,125	Bus. Svc., IS $85,333	Banking $69,870	Telecom $61,938	Bus. Svc., IS $75,167	Retail $72,273
Telecom $160,000	Bus. Svc., IS $113,050	Bus. Svc., IS $109,313	Banking $92,100	Retail $89,846	Banking $81,577	Telecom $69,000	Banking $57,240	Banking $73,357	Bus. Svc., IS $69,675
Banking $153,889	Media $93,375	Telecom $100,643	Telecom $81,500	Banking $89,024	Telecom $77,500	Bus. Svc., IS $53,316	Bus. Svc., IS $53,673	Distrib. $68,000	Banking $65,365
Bus. Svc., Non-IS $133,333	Retail $89,750	Insurance $87,667	Distrib. $77,000	Insurance $73,000	Distrib. $68,500	Nonprofit $51,875	Insurance $49,125	Retail $66,750	Telecom $64,000
Distrib. $127,006	Distrib. $87,250	Trans. $83,955	Insurance $75,400	Telecom $71,333	Retail $68,200	Bus. Svc., Non-IS $51,714	Nonprofit $45,111	Insurance $64,344	Distrib. $63,091
Retail $127,029	Telecom $79,706	Bus. Svc., Non-IS $75,947	Retail $70,875	Distrib. $67,950	Insurance $62,200	Insurance $50,600	Retail $44,567	Health $63,000	Health $60,643
Media $121,029	Insurance $76,600	Retail $73,000	Media $70,433	Media $65,000	Health $61,367	Retail $49,222	Distrib. $43,912	Telecom $61,167	Nonprofit $57,333
Insurance $120,438	Health $69,309	Nonprofit $72,417	Nonprofit $63,000	Bus. Svc., Non-IS $61,714	Gov't. $60,795	Media $48,000	Gov't. $43,872	Media $60,563	Gov't. $55,140
Health $107,776	Nonprofit $68,167	Health $71,196	Bus. Svc., Non-IS $63,357	Gov't $60,193	Nonprofit $56,000	Gov't. $47,740	Bus. Svc., Non-IS $43,842	Trans. $60,056	Media $52,833
Gov't. $80,188	Bus. Svc., Non-IS $67,806	Distrib. $70,189	Health $63,125	Nonprofit $56,000	Trans. $55,389	Distrib. $47,600	Health $43,803	Nonprofit $59,700	Trans. $52,400
Trans. $79,150	Trans. $66,400	Media $67,733	Gov't. $60,312	Educ. $55,778	Media $53,667	Trans. $47,222	Media $43,375	Gov't. $59,297	Insurance $50,889
Educ. $77,931	Gov't $64,175	Gov't. $67,044	Trans. $58,222	Health $55,429	Bus. Svc., Non-IS $47,722	Health $45,389	Trans. $40,462	Bus. Svc., Non-IS $54,750	Educ. $49,719
Nonprofit $71,750	Educ. $57,561	Educ. $63,868	Educ. $53,558	Trans. $52,364	Educ. $47,500	Educ. $37,793	Educ. $37,596	Educ. $48,088	Bus. Svc., Non-IS $48,000
INDUSTRY, MANUFACTURING					**INDUSTRY, MANUFACTURING**			**INDUSTRY, MANUFACTURING**	
Forest Prod. $171,500	Forest Prod. $107,438	Consumer Prod. $104,750	Forest Prod. $114,600	Consumer Prod. $116,000	Food/ Bev. $85,250	Forest Prod. $75,083	Computers $56,727	Consumer Prod. $90,125	Forest Prod. $83,500
Consumer Prod. $162,318	Industrial Equip. $106,250	Computers $102,875	Food/ Bev. $99,375	Industrial Equip. $103,250	Forest Prod. $84,667	Consumer Prod. $73,500	Consumer Prod. $56,219	Computers $79,000	Consumer Prod. $82,600
Food/ Bev. $134,950	Food/ Bev. $105,417	Chemical $88,977	Consumer Prod. $93,167	Food/ Bev. $96,5000	Consumer Prod. $83,875	Chemical $65,500	Chemical $55,714	Forest Prod. $77,167	Computers $72,200
Chemical $133,600	Computers $101,625	Forest Prod. $86,317	Chemical $83,333	Forest Prod. $92,313	Chemical $68,083	Industrial Equip. $58,892	Forest Prod. $52,038	Industrial Equip. $75,833	Food/ Bev. $67,700
Aero./ Auto. $130,667	Consumer Prod. $106,250	Met./Plas./ Rubber $83,034	Industrial Equip. $79,250	Computers $85,000	Met./Plas./ Rubber $60,700	Food/ Bev. $52,417	Industrial Equip. $49,683	Aero./ Auto. $74,750	Chemical $65,667
Industrial Equip. $130,563	Chemical $88,750	Food/ Bev. $80,650	Met./Plas./ Rubber $68,000	Chemical $73,667	Computers $55,000	Met./Plas./ Rubber $50,375	Food/ Bev. $48,250	Food/ Bev. $70,250	Aero./ Auto. $56,000
Computers $115,583	Aero./ Auto. $71,000	Aero./ Auto. $79,478	Computers $58,333	Aero./ Auto. $71,000	Aero./ Auto. $53,500	Aero./ Auto. $47,636	Met./Plas./ Rubber $47,438	Met./Plas./ Rubber $68,389	Industrial Equip. NA
Met./Plas./ Rubber $94,769	Met./Plas./ Rubber $70,958	Industrial Equip. $77,146	Aero./ Auto. $45,000	Met./Plas./ Rubber $56,200	Industrial Equip. $53,333	Computers $46,625	Aero./ Auto. $45,667	Chemical $66,167	Met./Plas./ Rubber NA
COMPANY SIZE (BY REVENUE)					**COMPANY SIZE (BY REVENUE)**			**COMPANY SIZE (BY REVENUE)**	
Under $100M: $92,203 $100M – $499.9M: $124,284 $500M or more: $202,355	Under $100M: $67,467 $100M – $499.9M: $79,702 $500M or more: $107,516	Under$100M: $65,863 $100M – $499.9M $90,949 $500M or more: $109,421	Under $100M $56,363 $100M – $499.9M $71,267 $500M or more: $99,282	Under $100M $61,371 $100M – $499.9M $67,871 $500M or more: $94,268	Under $100M: $55,210 $100M – $499.9M: $62,855 $500M or more: $79,393	Under $100M: $45,420 $100M – $499.9M $53,093 $500M or more: $62,409	Under $100M: $41,944 $100M – $499.9M: $49,018 $500M or more: $56,859	Under $100M: $58,165 $100M – $499.9M: $67,210 $500M or more: $76,847	Under $100M: $56,139 $100M – $499.9M: $60,388 $500M or more: $68,580

NA: Not available

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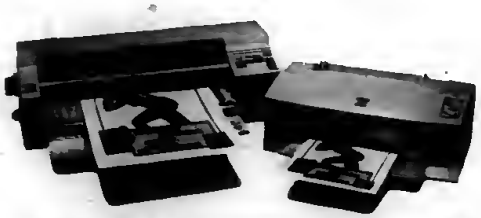

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Computerworld's 11th ANNUAL SALARY SURVEY

Getting their just desserts

With IS professionals working harder and longer, companies are upping the performance bonus ante. Here's how they decide which yardsticks apply:

KEY PER PERFORMANCE	% OF TOTAL COMPENSATION
Individual job performance	5%
Department performance	1%
Company financial performance	5%

Senior systems analyst	Systems analyst	Senior systems programmer	Systems programmer	Senior programmer/ analyst	Programmer/ analyst	Database manager	Database analyst	Webmaster/ Web designer	Manager of Internet/ intranet technology
SYSTEMS DEVELOPMENT AND INTEGRATION									
Average: $53,176 Bonus: $3,150 Total: $56,326	Average: $48,053 Bonus: $3,069 Total: $51,122	Average: $53,570 Bonus: $2,927 Total: $56,497	Average: $46,375 Bonus: $2,581 Total: $48,956	Average: $49,498 Bonus: $3,081 Total: $52,579	Average: $40,739 Bonus: $2,339 Total: $43,078	Average: $56,368 Bonus: $4,641 Total: $60,869	Average: $50,410 Bonus: $3,512 Total: $53,922	Average: $46,270 Bonus: $4,373 Total: $50,643	Average: $55,005 Bonus: $6,141 Total: $61,146
INDUSTRY, NONMANUFACTURING									
Telecom $69,500	Bus. Svc., IS $59,788	Banking $66,260	Telecom $73,250	Telecom $60,000	Telecom $47,900	Bus. Svc., IS $79,250	Bus. Svc., IS $64,455	Telecom $73,500	Bus. Svc., IS $63,125
Banking $60,730	Retail $59,500	Telecom $63,000	Bus. Svc., IS $55,844	Bus. Svc., IS $59,824	Banking $46,706	Banking $66,900	Insurance $58,750	Bus. Svc., IS $60,400	Telecom $67,333
Bus. Svc., IS $60,325	Telecom $57,600	Bus. Svc., IS $62,553	Banking $53,600	Banking $58,500	Bus. Svc., IS $45,481	Retail $62,929	Banking $57,947	Banking $60,033	Banking $64,433
Nonprofit $60,000	Banking $54,444	Retail $61,857	Health $48,409	Media $57,375	Retail $44,917	Insurance $62,286	Distrib. $57,700	Health $56,938	Media $64,063
Distrib. $57,813	Distrib. $51,333	Nonprofit $60,000	Distrib. $48,286	Retail $54,286	Nonprofit $44,542	Telecom $61,100	Nonprofit $53,500	Insurance $50,000	Distrib. $63,500
Insurance $54,000	Nonprofit $47,600	Trans. $56,643	Trans. $47,571	Insurance $52,969	Media $42,636	Distrib. $60,125	Health $52,046	Nonprofit $47,300	Health $58,500
Retail $53,750	Trans. $47,143	Health $56,591	Gov't. $47,133	Nonprofit $52,333	Distrib. $42,413	Media $59,000	Retail $49,500	Media $45,125	Nonprofit $53,667
Bus. Svc., Non-IS $53,667	Health $46,438	Insurance $54,125	Nonprofit $46,750	Distrib. $51,250	Insurance $42,300	Trans. $54,500	Media $49,125	Distrib. $45,000	Gov't. $52,864
Media $53,600	Gov't. $46,435	Distrib. $53,750	Insurance $46,250	Gov't. $50,921	Trans. $41,456	Nonprofit $54,500	Gov't. $47,381	Gov't. $42,600	Trans. $52,667
Health $52,143	Media $44,167	Gov't. $52,000	Bus. Svc., Non-IS $44,857	Health $49,417	Gov't. $46,458	Health $53,600	Educ. $39,821	Retail $39,667	Retail $45,000
Trans. $51,222	Bus. Svc., Non-IS $43,500	Media $50,700	Media $44,500	Trans. $45,100	Health $38,811	Gov't. $53,275	Bus. Svc., Non-IS $36,917	Educ. $37,500	Educ. $40,393
Gov't. $49,722	Insurance $42,000	Bus. Svc., Non-IS $47,900	Educ. $39,895	Bus. Svc., Non-IS $43,962	Bus. Svc., Non-IS $37,667	Bus. Svc., Non-IS $46,200	Telecom NA	Bus. Svc., Non-IS $35,200	Bus. Svc., Non-IS NA
Educ. $43,406	Educ. $40,152	Educ. $45,900	Retail $35,357	Educ. $38,589	Educ. $35,750	Educ. $46,077	Trans. NA	Trans. $35,000	Insurance NA
INDUSTRY, MANUFACTURING									
Computers $74,778	Industrial Equip. $66,583	Computers $79,750	Consumer Prod. $70,000	Industrial Equip. $64,300	Computers $52,750	Consumer Prod. $99,750	Aero./ Auto. $68,500	Consumer Prod. $84,000	Chemical $80,000
Forest Prod. $64,813	Consumer Prod. $63,600	Consumer Prod. $79,250	Computers $64,667	Consumer Prod. $60,292	Chemical $49,367	Aero./ Auto. $76,250	Chemical $80,000	Computers $77,917	Forest Prod. $80,000
Consumer Prod. $64,227	Forest Prod. $62,750	Forest Prod. $61,000	Forest Prod. $53,000	Computers $59,250	Consumer Prod. $49,056	Computers $74,833	Consumer Prod. $62,000	Forest Prod. $66,500	Consumer Prod. $75,000
Chemical $61,089	Aero./ Auto. $59,300	Chemical $61,000	Chemical $52,000	Forest Prod. $57,350	Industrial Equip. $47,583	Chemical $69,875	Forest Prod. $60,667	Chemical $65,000	Met./Plas./ Rubber $61,667
Met./Plas./ Rubber $60,733	Food/ Bev. $54,600	Aero./ Auto. $57,600	Food/ Bev. $46,900	Chemical $56,813	Aero./ Auto. $46,281	Forest Prod. $65,500	Met./Plas./ Rubber $50,611	Aero./ Auto. $52,000	Computers $55,000
Industrial Equip. $59,111	Computers $52,833	Met./Plas./ Rubber $53,900	Aero./ Auto. $46,313	Aero./ Auto. $51,400	Forest Prod. $46,182	Food/ Bev. $64,250	Food/ Bev. $48,200	Food/ Bev. $49,250	Aero./ Auto. $43,500
Food/ Bev. $59,000	Chemical $49,500	Food/ Bev. $51,375	Met./Plas./ Rubber $43,750	Food/ Bev. $50,750	Met./Plas./ Rubber $42,725	Met./Plas./ Rubber $54,625	Industrial Equip. $45,333	Industrial Equip. $43,800	Food/ Bev. NA
Aero./ Auto. $50,714	Met./Plas./ Rubber $48,000	Industrial Equip. $50,750	Industrial Equip. $51,500	Met./Plas./ Rubber $49,481	Food/ Bev. $39,885	Industrial Equip. $48,667	Computers NA	Met./Plas./ Rubber $40,333	Industrial Equip. NA
COMPANY SIZE (BY REVENUE)									
Under $100M: $50,158 $100M – $499.9M: $58,425 $500M or more: $61,307	Under $100M: $46,835 $100M – $499.9M: $50,954 $500M or more: $56,565	Under $100M $50,426 $100M – $499.9M $56,576 $500M or more $63,901	Under $100M $42,297 $100M – $499.9M $49,063 $500M or more $55,199	Under $100M $50,250 $100M – $499.9M $51,045 $500M or more $57,797	Under $100M $39,771 $100M – $499.9M $43,133 $500M or more $48,561	Under $100M $50,213 $100M – $499.9M $58,020 $500M or more: $75,221	Under $100M: $44,015 $100M – $499.9M: $54,064 $500M or more: $61,300	Under $100M: $43,767 $100M – $499.9M $48,861 $500M or more: $63,156	Under $100M: $51,209 $100M – $499.9M: $56,870 $500M or more: $75,563

NA: Not available

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Job turnover in IS remains at approximately 10% nationally, but some industries are having a really tough time keeping staff on board

	% OF IS DEPARTMENT TURNOVER IN 1996
Pharmaceuticals	19%
Telecommunications	17%
Computer software/ hardware	16%
Automotive	15%
Insurance	15%

Computerworld's 11th ANNUAL SALARY SURVEY

Computer operations manager	Computer operations supervisor	Lead computer operator
Average: $51,268 Bonus: $4,241 Total: $55,509	Average: $39,136 Bonus: $2,134 Total: $41,270	Average: $30,958 Bonus: $1,654 Total: $32,612
Bus. Svc., IS $70,115	Bus. Svc., IS $51,238	Telecom $41,400
Telecom $69,300	Telecom $49,400	Bus. Svc., IS $35,286
Gov't. $59,637	Nonprofit $44,250	Nonprofit $33,800
Banking $55,464	Gov't. $42,430	Banking $33,679
Media $52,967	Banking $42,089	Insurance $33,278
Retail $52,831	Retail $40,611	Gov't. $32,514
Insurance $51,667	Trans. $40,571	Distrib. $30,050
Health $49,783	Insurance $39,100	Health $30,167
Trans. $48,125	Distrib. $36,177	Retail $30,132
Nonprofit $47,750	Media $35,917	Media $29,857
Distrib. $45,545	Health $35,000	Bus. Svc., Non-IS $26,800
Bus. Svc., Non-IS $43,962	Educ. $31,563	Educ. $26,768
Educ. $43,295	Bus. Svc., Non-IS $30,500	Trans. $26,709
INDUSTRY: MANUFACTURING		
Consumer Prod. $70,333	Consumer Prod. $71,000	Consumer Prod. $46,550
Industrial Equip. $66,100	Computers $55,000	Industrial Equip. $43,600
Food/ Bev. $65,900	Forest Prod. $45,700	Forest Prod. $40,438
Forest Prod. $64,333	Industrial Equip. $45,000	Aero./ Auto. $37,500
Aero./ Auto. $57,300	Aero./ Auto. $44,200	Computers $36,000
Met./Plas./ Rubber $54,526	Met./Plas./ Rubber $40,364	Chemical $32,300
Computers $53,500	Food/ Bev. $37,938	Food/ Bev. $30,375
Chemical $53,125	Chemical $37,200	Met./Plas./ Rubber $29,167
COMPANY SIZE (BY REVENUE)		
Under $100M: $48,916 $100M – $499.9M: $55,486 $500M or more: $64,925	Under $100M: $36,664 $100M – $499.9M: $38,753 $500M or more: $49,083	Under $100M: $29,075 $100M – $499.9M: $31,957 $500M or more: $38,604

PC technical support specialist	Micros manager/ End-user computing manager	Technical support manager/Help desk manager	PC technical support specialist
Average: $25,686 Bonus: $1,547 Total: $27,233	Average: $48,388 Bonus: $3,111 Total: $51,499	Average: $42,928 Bonus: $2,658 Total: $45,586	Average: $32,613 Bonus: $1,467 Total: $34,080
Nonprofit $30,125	Telecom $63,375	Banking $55,750	Telecom $41,375
Gov't. $29,870	Banking $59,700	Telecom $52,875	Banking $38,130
Telecom $29,600	Bus. Svc., IS $57,045	Bus. Svc., IS $49,719	Bus. Svc., IS $37,556
Bus. Svc., IS $28,900	Retail $52,875	Distrib. $47,875	Media $35,200
Retail $28,023	Gov't. $52,225	Retail $45,250	Gov't. $34,387
Media $26,577	Insurance $51,625	Gov't. $44,552	Health $33,471
Banking $26,528	Media $50,875	Health $41,474	Retail $33,393
Distrib. $24,600	Nonprofit $50,750	Media $41,167	Insurance $32,467
Trans. $24,333	Health $48,467	Nonprofit $40,875	Distrib. $32,227
Insurance $23,967	Distrib. $44,864	Bus. Svc., Non-IS $38,287	Bus. Svc., Non-IS $31,750
Educ. $23,811	Trans. $41,250	Insurance $37,200	Nonprofit $30,643
Health $23,664	Educ. $40,462	Trans. $34,600	Trans. $29,944
Bus. Svc., Non-IS $22,900	Bus. Svc., Non-IS $40,214	Educ. $34,327	Educ. $27,677
INDUSTRY: MANUFACTURING			
Forest Prod. $36,660	Forest Prod. $74,000	Food/ Bev. $59,750	Forest Prod. $45,200
Consumer Prod. $36,660	Consumer Prod. $71,667	Consumer Prod. $56,400	Computers $41,500
Chemical $34,800	Food/ Bev. $61,200	Forest Prod. $54,057	Aero./ Auto. $41,286
Computers $33,200	Chemical $58,667	Met./Plas./ Rubber $49,222	Consumer Prod. $38,136
Aero./ Auto. $31,900	Industrial Equip. $45,000	Aero./ Auto. $44,000	Industrial Equip. $38,107
Industrial Equip. $30,727	Computers $44,250	Chemical $43,625	Food/ Bev. $37,929
Met./Plas./ Rubber $25,900	Met./Plas./ Rubber $42,857	Industrial Equip. $37,333	Chemical $36,429
Food/ Bev. $25,889	Aero./ Auto. NA	Computers $36,000	Met./Plas./ Rubber $32,190
COMPANY SIZE (BY REVENUE)			
Under $100M $25,879 $100M – $499.9M: $26,462 $500M or more: $31,499	Under $100M $43,941 $100M – $499.9M: $48,096 $500M or more: $62,428	Under $100M: $37,262 $100M – $499.9M $45,829 $500M or more: $55,781	Under $100M: $30,957 $100M – $499.9M: $34,021 $500M or more: $39,202

NA: Not available

METHODOLOGY

Computerworld conducted a nationwide survey on information systems managers to determine the annual salaries, salary increases, additional compensations and turnover for IS personnel. The mail survey was conducted in June. A total of 1,214 responses were received.

Average number of IS employees

Manufacturing	429
Nonmanufacturing	355

Average number of employees

Manufacturing	5,006
Nonmanufacturing	3,900

Estimated average revenue or assets

Manufacturing	$967M
Nonmanufacturing	$753M

Response by industry: Manufacturing

Aerospace and automotive	3.4%
Chemical	2.1%
Computer hardware and software	2.9%
Consumer products	1.1%
Food, beverage and tobacco	2.3%
Forest products	2.9%
Industrial equipment	1.8%
Metals, plastics and rubber	2.2%
Other	3.2%
Total	21.9%

Response by industry: Nonmanufacturing

Banking	7.5%
Business services, IS	5.9%
Business services, non-IS	3.8%
Distribution	7.1%
Education	9.7%
Government	10.2%
Health care	7.5%
Insurance	3.7%
Media	2.8%
Nonprofit	3.5%
Retail	6.1%
Telecommunications and utilities	1.8%
Transportation	2.8%
Other	4.9%
Total	78.1%

Buyer's Guide

NT CHANGING RULES for DESKTOP SUITES

COMPUTERWORLD spoke with users of Intel's LANDesk Management Suite, Novell's ManageWise and McAfee Associates' Zero Administration Client. They share their NT gripes and suite delights.

BY AMY MALLOY

Sure we have to remind Windows NT — again. You hear about it all the time. And now it's shaking up the desktop management market. Desktop management suites seem to do the job for users today, but the emergence of NT changes the rules, and vendors are scrambling to address the popularity of that operating system.

The No. 1 user complaint about Intel Corp.'s LANDesk Management Suite, Novell, Inc.'s ManageWise and McAfee Associates, Inc.'s Zero Administration Client (ZAC) is poor Windows NT support. Vendors say future versions of their products will provide adequate NT support.

Other than NT support gripes, users of each product pat their respective vendor's backs. We contacted four users of each product to assess customer satisfaction. Those users had few complaints other than NT support. The products help them manage their networks, keep them up-to-date about applications on their desktops and simplify application installations.

We asked the users to provide their opinions on installation, ease of use, breadth of management capability, compatibility/integration with other software, and technical support.

Read on to get a firsthand glimpse of these products.

LANDesk, page 72

CONTINUED FROM PAGE 71

LANDesk Management Suite

Intel's LANDesk Management Suite is like a player piano — at least in the words of one network administrator. The suite runs by itself, working in the background, fine-tuning systems.

Computerworld interviewed the following LANDesk Management Suite users to assess customer satisfaction:

- Tim Munn, director of computer services at the School of Pharmacy at the University of Maryland at Baltimore.
- J. B. Krewson, network engineer at Franciscan Health Services Catholic Health Initiative in Tacoma, Wash.
- Lance Bedingfield, systems engineer at Dixie Regional Medical Center in St. George, Utah.
- Andrew Drummond, MIS manager at Livonia, Mich.-based TechnoTrim, Inc.

All four users say they would still pick LANDesk if they had to choose again. They cite the breadth and accuracy of the inventory information, remote management capabilities and software distribution and metering.

But users want Intel to provide better integration with software, better NT support and smoother upgrades.

INSTALLATION

The users ran into trouble — some serious — during installation.

Munn says he had to manually edit some of the autoexec.ncf files and fiddle with the Login Script to make sure it worked. But installation overall was fine, he says.

For Krewson, the upgrades were difficult. Older versions of LANDesk have been incompatible with each new release.

Drummond needed only a few patches during his LANDesk installation. It was a simple, snap-in process, he says.

EASE OF USE

The users say Intel designed LANDesk well but crowded too much into the product.

"It's pretty congested," Drummond says. "There's so much in the package." It took a little time for him to fully understand the application.

Munn says the interface is good but neither it nor the main console interface is as intuitive as he would like.

FEATURES

The four users request only a few additional management capabilities such as better Windows NT support. LANDesk now runs on Windows 95, but not on NT.

Munn says he would like built-in Simple Network Management Protocol management capabilities. He can't manage hubs or switches through LANDesk.

"I would like to see better management of NT Workstation," Bedingfield adds.

Krewson agrees. He's starting to run NT in a few places on the network. He also used LANDesk as a lower-end network monitoring tool until his company could bring in more powerful tools.

A couple of users ran into problems with LANDesk and other software. Incompatibility problems with NT top the list.

Bedingfield was already familiar with NT problems and says the management console function doesn't work completely with NT Workstation.

Krewson says he wishes LANDesk would do a better job sharing data. It would be a great help to share information between LANDesk and help desk software, he says.

Drummond says he hasn't experienced compatibility problems. "Everything is a snap-in," he says. A lot of systems have some sort of LANDesk software on them.

TECHNICAL SUPPORT

These users say Intel knows its stuff and doesn't make you wait.

Krewson says he's seen a lot of improvement over the past year. Previously, it could have taken a couple of days to hear back from Intel, but now support responds promptly, he says.

Munn says he finds a lot of information at Intel's newsgroup on the vendor's World Wide Web site.

INTEL RESPONDS

Intel's Version 2.52 of LANDesk Management Suite was scheduled to be released late last week. It provides additional NT Workstation management, improved remote control, easier upgrades and the ability to plug in to the enterprise console of Tivoli Systems, Inc.'s TME 10.

ManageWise

A few glitches and some missing features aside, Novell's ManageWise does the job for users. Customers want some additions, such as software metering and the ability to run on NT 4.0 rather than just Windows 95. But primarily, they say good things.

Users say they like ManageWise's integration with Novell Directory Services and its ability to control NetWare 4.11 servers. It has highly integrated management capabilities.

Users want ManageWise running on NT, 32-bit virus scanning, more in-depth asset management of PCs and integrated paging.

Computerworld spoke to the following ManageWise users:

- Rick Soto, network administrator at the Florida Department of Transportation in Miami.
- Simon Taufique, network administrator at the controller's division at New York University in New York.
- Marty Lintz, systems manager at Johnson Controls, Inc. in Goshen, Ind.
- Andy Von Der Brüegge, computer information specialist at the Missouri Department of Health in Jefferson City.

INSTALLATION

Two users say installation was cut-and-dried; the others ran into minor complications.

Von Der Bruegge says he loved the installation of ManageWise 2.1. "It's a hands-off method. Once I got it started, I could walk away from it," he says.

Taufique says the server-end installation was clear, but ManageWise didn't implement some Network Login Script modifications.

EASE OF USE

All the users say ManageWise is intuitive.

"I get more information than I thought possible," Taufique says. He

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says he likes features such as the graphical map of the network, the concise databases of workstations and the comprehensive view of the network.

FEATURES

The users want software distribution functions, software metering and support for 32-bit applications.

Soto says Novell needs to add software distribution, software metering and file-version control.

Taufique says it's possible to both manage and document with the same product, eliminating the need to create a map of the network.

ManageWise integrates well with many applications, but users ran into compatibility problems.

"I would like for there to be additional plug-ins to other applications," Taufique says. For instance, he says, he had trouble integrating Cheyenne Software, Inc.'s ARCserve.

Von Der Bruegge occasionally runs into compatibility problems between ManageWise and Bay Networks, Inc.'s Optivity. His company uses a lot of snap-in applications.

TECHNICAL SUPPORT

Novell's technical support gets mixed reviews. Users find that good support is possible, but it's expensive.

When Lintz calls Novell, he gets accurate answers, but he says he dislikes Novell's pay-as-you-go program for support. He relies on Novell's Web site to find answers to most of his questions.

Von Der Bruegge reports great support through his master license agreement with Novell, which gives him access to Novell's networking expertise. But before becoming an master license site, he had to jump through a lot more hoops to get an answer, he says.

NOVELL RESPONDS

The company plans to offer NT remote control, NT hardware, software inventory and comprehensive virus protection this fall.

In the near future, the following should be in place: the ability to run both old and new software simultaneously, significant enhancements for 32-bit clients, integration of an asset management product, the ability to use NT 4.0 as s management console, and integrated paging.

ZAC

The name changed, but the product is the same, and McAfee's Zero Administration Client wins user praise.

Computerworld contacted the following users of ZAC — until recently known as SaberLAN Workstation — prior to the release of the latest version of the product to gauge their satisfaction:

- Steve Drohan, project manager at LifeScan, Inc. in Milpitas, Calif.
- Todd Lewis, a network engineer at Provident Bank of Maryland in Baltimore.
- Dave Riegler, principal analyst at Goodyear Tire and Rubber Co. in Akron, Ohio.
- Dianne C. DelVecchio, vice president at Network Data Services, Inc. in Plano, Texas.

The users provided us with a longer list of likes than dislikes. They say they like the product's flexibility, maturity, accuracy, modular appearance, integration, consistent interface — regardless of desktop operating system — timely bug fixes and regular upgrades. But they want increased inventory speed, tighter integration with WinCompare (a software installation utility), s stronger application launcher and notification of upgrades.

INSTALLATION

Good documentation made the difference between a confusing installation and a straightforward one for two of the users.

DelVecchio says she likes the help screens that pop up when she has a question.

Lewis also found installation fairly simple, but he had to manually load portions of the application, such as the NetWare Loadable Modules. That added time to the installation process, but it didn't pose a problem.

EASE OF USE

Users view ZAC as a complex product with a learning curve.

The documentation on the product isn't very clear; it lacks real-world examples of how to do things. And in some cases, documentation isn't available, Riegler says.

You have to look through the manual sometimes. It isn't something a novice can install without a basic understanding of a network, DelVecchio says.

FEATURES

Users are looking for enhancements on existing capabilities and NT support, but overall they like the product's capabilities.

Lewis wants to see tweaks such as moving inventory to an SQL-type database and a more thorough SiteExpress, which is a module that sends applications to the PCs. He says SiteExpress doesn't monitor an application when it's installing itself.

Riegler wants McAfee to improve its support of Windows NT. He's unable to totally manage his 75 NT workstations with ZAC.

ZAC generally works well with other products. In one case in which it didn't integrate with a product, McAfee came in and fixed the problem.

Drohan says he had s mandate to use Microsoft Corp.'s System Management Server (SMS). He worked with McAfee to plug the company's product suite in to SMS. Now he runs one desktop management database.

DelVecchio says ZAC's integration with Windows is one of its strengths.

TECHNICAL SUPPORT

McAfee scored well in general, but the users mark it down a bit in support. Complaints center on product knowledge and response time.

When asked about technical support, Lewis says service quality depends on who answers the phone.

Goodyear has a service/support agreement with McAfee, so the same person always answers Riegler's technical support questions. But it sometimes takes a while to get an answer, and Riegler has to raise his voice to get a response.

MCAFEE RESPONDS

The next release — there's no time frame — will support 16- and 32-bit environments, a cost analysis tool, SQL support, desktop interface support, remote installation capabilities and s Microsoft Management Console-ready console. □

Malloy is Computerworld's associate editor, Buyer's Guide.

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PRODUCT REVIEW

Progress refreshes development tool

32-bit version allows developers and users to collaborate

By Howard Millman

Progress Software Corp.'s recently released 32-bit version of its enterprise-class application development and database management suite plugs a gap in the Progress platform lineup by letting developers and end users access the same data set from all major client/server and host/terminal platforms that use either a character or graphical user interface (GUI).

I tested Version 8.2's application designer and interface but couldn't equitably test the application's database components. Progress can handle more than 2,000 active connections per server. But it appears that the upgrade can continue to meet the performance and scalability expectations of its installed base. As a hybrid fourth-generation language (4GL) tool set, this version appears well-suited to handle high volumes of transaction processing tasks. And as an object-like development environment, it supports code reuse.

Enhanced Application Development Environment includes components such as User Interface Builder

Version 8.2 maintains backward compatibility with existing character- and DOS-based applications. A utility that ships with the 8.2 suite transforms those existing applications into graphical-based clients without rewriting any code. Progress says the utility can upgrade an existing 500M-byte database in about five minutes. I didn't test that feature.

Progress distinguishes itself from its two primary competitors, JYACC, Inc.'s JAM and Forte Software, Inc.'s Forte, through its use of a hybrid architecture. By combining a 4GL development environment with an object-like architecture, Progress 8.2 can create both character- and GUI-based applications. And it's particularly well-suited for developers moving from third-generation language environments.

Specific 32-bit enhancements in Version 8.2 include support for the Windows registry, Dynamic Link Libraries, faster screen refreshes and long file names. Newly added support for ActiveX and OLE automation simplifies sharing data with other Windows 95/NT products, including Microsoft Corp.'s Word, Excel and Corel Corp.'s WordPerfect. Progress plans to add Java support in the next release.

Internet distribution of finished applications should be welcomed by administrators, as it promises to reduce the headaches and costs involved with wide-area network upgrades.

Because Progress has vast capacity and wide-ranging scope, my tests with its database development, including embedding ActiveX automation, showed it to be comparatively straightforward and quick. The Application Development Environment (ADE) and database responded quickly, even when I had other large applications open.

Other enhancements include improved end-user reporting capabilities — compliments of Actuate Software Corp.'s Developer Workbench — plus expanded year 2000 support. Progress stores the year as a four-digit integer. Developers also can set a 100-year floating window, used to establish the "century," which allows dates to be entered with just two digits. That should cover most situations.

Actuate's report writer lets developers and end users generate countless predesigned and ad hoc reports, as well as browse, search and transfer data between reports. When combined with Progress's Virtual System Tables Database, Workbench provides administrators with a real-time snapshot of system usage.

Workbench also provides high-performance, native drivers for Progress, Sybase, Inc., Oracle Corp., Informix Software, Inc. and Microsoft SQL databases, plus Open Database Connectivity (ODBC) drivers for linking to most other databases. When using direct connections rather than generic ODBC connections, Progress says Workbench can process specific triggers and stored procedures optimized for a developer's target database.

I tried several of the new — or significantly improved — components in the ADE, including a Procedure Editor, User Interface Builder (UIB) and a foreign language source code translator called TranMan. The ADE also includes a data dictionary, data administration tool, compiler, debugger and a competent assortment of development and run-time utilities.

The UIB serves as the primary visual programming tool. It can use a single set of source code to create graphical and character-based applications, which reduces the cost and complexity of application maintenance and configuration management. The UIB supports object-based, event-driven and structured programming paradigms, plus component development.

The Procedure Editor lets you create, edit, compile and run 4GL-type procedures, compared with the event-based procedures created by the UIB.

TranMan automates the process of deploying applications in multiple languages, including Western European, Eastern European, North American, Latin American and Middle Eastern. A double-byte option includes support for most Asian languages, including Japanese, Korean, simplified Chinese and traditional Chinese. It selects words and phrases from single-source procedure files and translates them into other languages. Those selected words and phrases are then assembled into files and sent to human translators for review and integration. Translations can be deployed on both Windows and non-Windows platforms.

Progress says Version 8.2 will integrate with third-party database modeling tools. That version also simplifies the distribution of completed applications to clients via the Internet. Progress's optional Roundtable provides versioning, workflow control and configuration management for team-oriented development projects.

HIGH-SPEED HYBRID

Progress's product is principally a 4GL, which makes it well-suited for building and handling high-volume transaction-processing tasks. It also contains object-oriented features such as SmartObjects, a class library of reusable application components; and SmartLinks, a selection of helpful wizards and SmartContainers that encapsulate and facilitate reuse of objects. I tested prepackaged SmartObjects, but developers also can write their own.

Although the end user's code isn't fully object-oriented, it supports inheritance and encapsulation. Consequently, developers enjoy some productivity gains, and the staffers charged with the care and feeding of the applications should have fewer headaches.

Progress's UIB deftly handles the low-level tasks and provides some neat high-level aids. For example, CueCards explain how the selected SmartObject works and list key steps for the developer to follow while using a specific type of SmartObject. In other cases, a Progress Advisor dialog box appears when you add a SmartObject.

According to Progress, the accuracy and applicability of the Advisor's suggestions increase significantly if you first develop a flow chart to define your application's workflow before you start coding and building tables. □

Millman operates Data Systems Services Group, an independent consultancy in Croton, N.Y. He can be reached at hmillman@mcimail.com

PRODUCT REVIEW ▸

Progress Version 8.2
Progress Software Corp.
Bedford, Mass. 01730
(800) 477-6473
www.progress.com

OVERALL GRADE A-

Platforms: Windows 95, Windows NT, most flavors of Unix

Pricing: $3,600 for 1 to 4 seats; $3,000 for 5 to 9 seats. Runtime module costs about $95 per user. Roundtable configuration tool costs $1,000 per seat.

Summary: Developers building high-end, transaction-oriented client/server- and host/terminal-based applications will find much to like in Progress Version 8.2. The upgrade moves the combination application development front end and relational database manager back end into the 32-bit arena.

COMPUTERWORLD

For other reviews of application development tools, head to our Web site at www.computerworld.com/guide/reviews_ss.html

Past reviews include the following:
- Delphi 3
- Visual Basic 5.0
- Visual C++ Enterprise
- PowerSoft PowerBuilder 5
- Delphi 2

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In Depth

Will Grandpa's pacemaker *really* STOP an. 000?*

We debunk some of the more lurid horror stories surrounding the year 2000 problem

By Forrest Canon

Don't show this article to your CEO.

In a way, the recent spate of year 2000 scare stories has been a godsend for information systems shops trying to make headway on the problem. After all, even the most technophobic business executives have had their year 2000 consciousness raised, and that's good news when you're trying to chisel loose a few more dollars from the corporate budget.

ILLUSTRATIONS BY ELWOOD SMITH

But the general media needs sexy stories to serve as its year 2000 hook. As a result, we've been treated to tales of missing pension checks, cars that won't start, handcuffs slapped on upstanding citizens who are shown to be 95 years in arrears on their mortgage payments, and on and on.

Party poopers that we are, we looked into some of the most ballyhooed year 2000 horror stories to get the truth, not the hype.

But there's no reason your CEO needs to know about this.

Stop, page 78

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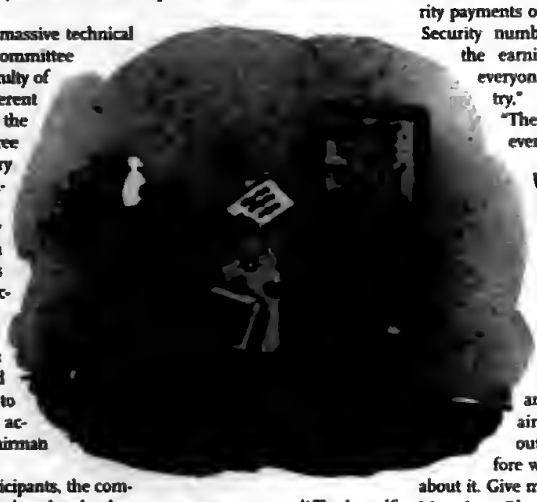
Will Grandpa's pacemaker *really* STOP Jan. 1, 2000?*

CONTINUED FROM PAGE 27

WILL THE ATM EAT MY BANK CARD? WILL I HAVE ANY MONEY LEFT FOR IT TO EAT?

The financial industry, highly dependent on date-sensitive transactions, is particularly vulnerable to year 2000 liability. So the Securities Industry Association in 1995 formed a year 2000 committee to coordinate the industry's year 2000 effort worldwide.

Besides its massive technical task, the committee faces the difficulty of getting different segments of the industry to agree on how to carry out and prioritize activities. "You usually wind up with disagreements between participating firms, exchanges and utilities as to when and how you need to do things," according to Chairman Mike Tiernan.



To help participants, the committee has developed tasks that must be completed by certain dates, and scorecards that follow the progress of each securities firm and bank.

The areas considered top priority are trading that is done for customers and member firms, including exchanges, utilities, banks and depositories.

How will they know if those areas are truly compliant?

"We have scheduled an industrywide test in the beginning of 1999, which should assure us that the large banks, member firms, depositories and utilities do actually work in process transactions," Tiernan says.

WILL AUNT MILLIE GET HER SOCIAL SECURITY CHECK?

According to Cathy Adams, assistant deputy commissioner for systems at the Social Security Administration (SSA), Millie has nothing to worry about. "Our goal is to have all of our software and all of our systems certified by Dec. 31, 1998," Adams says.

Easy to say, but what makes the SSA so confident? (Sure, President Clinton recently promised that federal systems would beat the year 2000 problem. But the very next day, the president claimed to have shot a 79 on a very difficult golf course. Pardon our skepticism.)

Like many IS shops, the SSA is attacking the year 2000 problem through a combination of the windowing technique, in which all numbers above 50 are read as belonging to the current century and all numbers below 50 are understood to be in the next century; and date-field expansion, in which the existing two-digit date field is expanded to four digits.

After the code is renovated, programs are put through regression testing to make sure functionality hasn't suffered.

But the SSA has taken an additional step that may account for Adams' confidence.

The administration has built a dedicated year 2000 test facility for what it calls Forward Year Integration Testing at SSA headquarters in Baltimore. The facility mirrors what production will look like beyond 2000.

All vendor products and operating systems in the facility are year 2000-compliant, and the system date is made to look beyond the millennium and at leap years.

The facility is used to certify internal software systems and vendor packages. "We run a lot of off-the-shelf packages, so we're running them through this test facility to make sure their claims of being compliant are true," Adams says.

Only after a package makes it through Forward Year Integration Testing does the SSA certify it as year 2000-compliant.

About 80% of the software the SSA is running has been renovated but hasn't gone through certification.

"We are starting with our mission-critical software — the software that sends Social Security payments out, issues Social Security numbers and tracks the earnings of almost everyone in this country," Adams says. "The trick is to find everything."

WILL MY AIRPLANE FALL FROM THE SKY?

"It's so silly for people to think that the industry is so stupid that we are going to sit here and wait for our airplanes to fall out of the sky before we do something about it. Give me a break!" says Mary Jean Olsen, communications manager for engineering product development at The Boeing Co. in Seattle.

Strong words. But those of us who may be cruising at 30,000 feet when the clock strikes midnight want more than words.

Boeing got an early jump on the year 2000 problem in 1993 and found it needed to evaluate 165 million lines of code.

The company was confident in its ability to conquer the problem because, as spokesman Paul Swortz says, "An airplane is a complex system, and making sure the 6 million pieces on a 747 are all there and functioning correctly is something we've been doing for a long time."

Boeing has created a central organization (part of its Information and Support Services Division) to provide knowledge, guidelines and tools, including prequalified outsourcing resources. Actual analysis and repair is carried out on an individual project basis throughout the company.

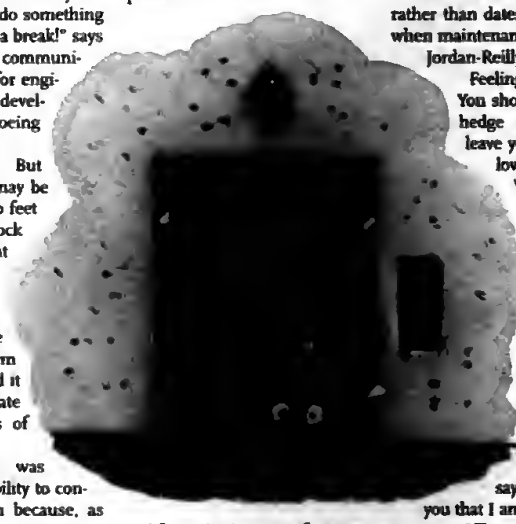
Since 1994, Boeing also has worked with its suppliers to analyze all flight-deck computer systems for the company's aircraft.

"One of the first areas tackled was to make sure the onboard systems were going to be secure," Swortz says. None of the onboard systems analyzed so far has date-logic problems, he says.

Boeing says it analyzed about 85% of its systems for year 2000 problems and has found nothing that would impact the safe operation of its airplanes. The company expected to complete its review by this month.

OK, we're breathing easier about Boeing, which is far and away the world's largest builder of passenger aircraft. But the company's hard work won't do much good if the control tower goes black, will it?

The Federal Aviation Administration (FAA) says it's working with Boeing and avionics manufacturers to determine what equipment will be affected. However, there are no FAA regulatory mandates that specifically address year 2000 compliance.



After avionics manufacturers change their onboard flight management systems to fix date-logic problems, the equipment must be tested and recertified by the FAA.

The FAA is still assessing its own on-ground navigational air traffic control systems.

The agency's approach is similar to Boeing's; it uses a central point of control, called the Office of Information Technology, to coordinate and disseminate information and to collect monthly status reports.

Meanwhile, each of the FAA's seven major lines of business is responsible for producing its own year 2000 bug plan.

The FAA's assessment will last until year's end; the renovation is scheduled to be complete by the end of next year. Then comes testing and implementation. A contingency plan will be developed for each system being renovated.

Here's one bit of unqualified good news: "Our navigational beacons and the radars themselves do not appear to be date sensitive in the first place," says FAA spokesman Les Dorr.

WILL THE ELEVATOR PLUNGE INTO THE BASEMENT?

One often-repeated year 2000 horror story holds that on Jan. 1, 2000, the chips in elevators will think they are long overdue for required servicing and will either stop working altogether or, worse, give riders the Wile E. Coyote treatment.

Never fear.

Mike Jordan-Reilly, spokesman for Otis Elevator Co., says, "Our elevators do not depend on calendar-based data."

Otis elevators monitor use, rather than dates, to determine when maintenance is necessary, Jordan-Reilly says. *Phew!*

Feeling any better? You should, but just to hedge our bets, we leave you with the following: What does William Ulrich, a co-author of *The Year 2000 Software Crisis* and the president of methodology development company Tactical Strategy Group, Inc., plan to do late in 1999? "Frankly," he says, "I have to tell you that I am going to buy a generator." □

Canon is a freelance writer in Cupertino, Calif.

*No. Tell Gramps to relax.

IT Careers

CHARTING New WATERS

By Ali LaPlante

A host of new IS jobs require mastery of both business and technology. But these nontraditional roles, and their salaries, are often hard to define

Smith [illegible] the new [illegible] had been [illegible] within his [illegible] IS depart- [illegible] jumped to [illegible]

Smith, a certified public accountant in the corporate internal audit services department at Carnival Corp., the cruise-line giant in Miami, had long had a foot in the technological world. In a previous job at an accounting firm, he had installed accounting software packages for small and midsize business clients. Since joining Carnival's audit team four years ago, Smith has put the firm's systems development efforts through rigorous and independent financial reviews.

So when Jim Bussey, Carnival's chief information officer, announced he was looking for an "IS finance manager," Smith says he thought the job was a match made in heaven. "It was a great opportunity to combine all my financial and technical experience," says Smith, who has been in his new role since June. "And it's so much fun, I don't feel like I'm at work."

Smith's chief responsibility is to help user departments understand the financial ramifications of proposed information systems initiatives. They might include return on investment, budget control, capital expenditure planning and leasing analyses. Smith helps users figure out what benefits — tangible and otherwise — they will derive from systems initiatives. And he deflates the vendor hype that can delude nontechnical users into having unrealistic expectations.

Smith is key in helping Carnival make that all-important transition to a competitive environment in which IS success is indistinguishable from business success.

Smith is one of a new breed of IS worker who not only acts as a liaison between end-user departments and technologists — after all, most information technology groups have had such people on board for a while — but who also plays a clearly strategic role.

About 70% of companies surveyed by Meta Group, Inc. for its annual "Report on the New IT Professional" have established what David Foote calls "IT/business account management" positions. Foote, author of the report and managing partner at Cromwell Partners LLC, a consultancy in Stamford, Conn., says those positions are created with "the fairly conservative goal" of acting as a diplomatic liaison between IT and non-IT departments.

But Foote says such roles are changing dramatically.

As line-of-business executives recognize the growing importance of IS in running their departments, more companies will establish what Meta Group calls "business technologists." These IS professionals will fill vastly more strategic — and well-compensated — positions at the corporate organizations of the future.

"Both our users and my project managers were being unnecessarily distracted from their main jobs," says Bussey, who created Smith's senior-level position after seeing Carnival's IT budget top $50 million. "I needed someone to focus solely on the financial aspects of systems development and who could communicate that very important information to technologists and nontechnologists alike."

CONNECTING THE DOTS

For an increasing number of CIOs, the critical new IS jobs are less about bleeding-edge technologies. Instead, say Bussey and others, the personnel concerns are more about the need to bridge the gap between traditional ways of doing business and the complex new universe in which technology is embedded in virtually every aspect of daily commerce.

"Yes, there are a number of new IT jobs being created in which it's essential to know [Hypertext Markup Language],

Charting new waters, page 80

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CONTINUED FROM PAGE 79

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Brian Hoffman agrees. In the past year, Hoffman, a managing partner at Winter, Wyman & Co., an IS recruiting firm in Waltham, Mass., began to get client requests for IS job candidates who could take on roles such as "relationship manager."

Organizations began to look for top-notch technologists who also had powerful skills in coordinating efforts across multiple organizational and business entities.

How easy is it to find qualified individuals? "Not very," Hoffman says. As a result, such positions often carry a significant pay premium, he says. Meta Group research has shown CIOs find a much higher degree of satisfaction when they hire non-IS types for such jobs (an 87% success rate) rather than technologists (a 35% success rate), Foote says.

"CIOs are finding it makes sense to bring in a seasoned business professional with a good general understanding of technology rather than a technologist with some interpersonal skills," Foote says. "Someone has to have proven their ability to provide intelligent and strategic direction — as well as how to collaborate across organizational levels."

Because the types of jobs are so new, workers hired to those positions must be prepared to see their responsibilities shift — often dramatically and rapidly.

SHIFTING DUTIES

Greg Robbins originally wanted to get World Wide Web experience. As a communications engineer at J. B. Hunt Transport Services, Inc. in Lowell, Ark., he was promoted to his current position of Internet middleware engineer in December to build a CICS gateway from a newly installed Web server to the corporate DB2 legacy databases. But that soon mushroomed into something else.

J. B. Hunt was an early intranet pioneer when it extended online access privileges to internal operations and its shipping customers. He now finds himself in charge of a successful — and extremely strategic — extranet application that lets J. B. Hunt clients log on to the network, view shipping schedules and delivery times and make changes when necessary.

Robbins, who racked up an impressively varied technical resume in his four years at J. B. Hunt, finds himself talking to logistics staffers about truck loading and routing. He visits the headquarters of J. B. Hunt's largest accounts to see how he can best serve their business needs. And he's setting up a support structure so IS professionals at J. B. Hunt customer sites can get help from specialists within J. B. Hunt in case of snafus with the extranet.

The job is so big that J. B. Hunt's vice president of technical services, Dale Langely, probably will create a separate department to handle the complex technical and business issues.

"There's a personality type you're looking for," says John Bruns, senior vice president of technical architecture for global software technology support at NationsBanc Services, Inc., the IS arm of NationsBank Corp. in Chicago. In the past year, Bruns has created jobs such as component engineer, middleware specialist and object request broker specialist.

The new IS workers have to wear several hats, Bruns says. First, they have to recognize when there's a gap between what's available from vendors and the third-party market and what the company needs to connect traditional systems with IT initiatives. They have to come up with conceptual designs that can be reused throughout the bank — for example, designs that aren't dependent on a particular user's needs or configuration. Then they have to evangelize the results so that success stories get heard throughout the bank.

Because they are senior roles, Bruns says he must pay more for these technology liaisons. But rather than fix a salary for that type of role, he says the bank "tends to reward our better developers, and our better developers are the ones who get these kind of jobs."

He promotes these senior-level workers from within only after he's confident of their mastery of the mix of technical and interpersonal skills required.

Salaries for the new types of IS workers can be hard to set, not because the jobs themselves are new, but because "of simple supply and demand," Hoffman says. "There's a shortage of people with these skills in the market.

Employers have to come up with generous and creative compensation and bonus plans to attract and retain them."

Foote's clients pay him for "salary schedules" for such hard-to-categorize positions.

He sees three levels of business technologists emerging: a traditional business analyst position that requires five years of business-unit experience and technology expertise, a midlevel project-manager type who has moved from consulting or coordinating on IS projects to managing them, and a director-level position that involves managing cross-functional teams that span the enterprise. □

LaPlante is a freelance writer in Woodside, Calif.

NEW KIDS ON THE BLOCK

A sampling of new IS job titles and skills requirements

Business technologists (new roles)
Line of business IT strategists
Line of business systems planners
General contractors
Financial analysts
Risk/competitive analysts
Contract specialists (negotiators)
Facilitation/coaching professionals
Process management specialists
Project managers

New-age technologists (new skills)
HTML, Java, C++, ActiveX
Object-oriented and component programmers
Data warehousing and Web architects
DBMS tuners
Unix/NT engineers
Middleware experts
Messaging, directories engineers
TCP/IP, switching specialists

Source: Meta Group, Inc., Stamford, Conn.

EXECUTIVE TRACK

Daniel Bruni, 40, was named vice president of information services at Harris-Teeter, Inc., a leading grocery retailer in Charlotte, N.C. He was previously chief information officer at Brothers Gourmet Coffee in Boca Raton, Fla.

Andy Sontag was named vice president of IS at Au Bon Pain in Boston. He was formerly vice president of IS at Checkers, a now-defunct restaurant chain. Sontag replaces **Mark Factor**, who left Au Bon Pain to start his own software and services company.

Mary Cirillo, 50, joined Bankers Trust New York Corp. as senior managing director and head of client processing services. She was formerly senior vice president and group head of operations and technology for corporate and commercial banking at Citibank in New York.

Debra J. Chrapaty was appointed chief information officer at ETrade Group, Inc., a Palo Alto, Calif.-based online investing service. Chrapaty joins ETrade from the National Basketball Association in New York, where she was chief information officer and chief technology officer. **David Ewing**, who currently serves as ETrade's CIO, will act as a consultant at ETrade before he leaves the company Sept. 30.

Pamela H. Older, 43, was promoted to senior vice president for manufacturing and information technology at *The New Yorker* magazine in New York. Older was formerly vice president and director of manufacturing at the magazine.

George J. Rewick was appointed vice president of information technology at CBIS, a Cincinnati Bell company in Cincinnati. Rewick will provide senior management leadership to CBIS's efforts to address year 2000 software conversion issues. Prior to joining CBIS, Rewick held IS executive positions at Chemical Banking Corp.

Jodie N. Ray, 52, was named to the newly created position of senior vice president and CIO at Brinker International, Inc., a restaurant chain based in Dallas. Ray previously served as CIO at Texas Instruments, Inc.

CHARTING New WATERS

CONTINUED FROM PAGE 79

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EXECUTIVE TRACK

Daniel Brunl, 40, was named vice president of information services at Harris-Teeter, Inc., a leading grocery retailer in Charlotte, N.C. He was previously chief information officer at Brothers Gourmet Coffee in Boca Raton, Fla.

Andy Sontag was named vice president of IS at Au Bon Pain in Boston. He was formerly vice president of IS at Checkers, a now-defunct restaurant chain. Sontag replaces **Mark Factor**, who left Au Bon Pain to start his own software and services company.

Mary Cirillo, 50, joined Bankers Trust New York Corp. as senior managing director and head of client processing services. She was formerly senior vice president and group head of operations and technology for corporate and commercial banking at Citibank in New York.

Debra J. Chrapaty was appointed chief information officer at ETrade Group, Inc., a Palo Alto, Calif.-based online investing service. Chrapaty joins ETrade from the National Basketball Association in New York, where she was chief information officer and chief technology officer. **David Ewing**, who currently serves as ETrade's CIO, will act as a consultant at ETrade before he leaves the company Sept. 30.

Pamela H. Older, 43, was promoted to senior vice president for manufacturing and information technology at *The New Yorker* magazine in New York. Older was formerly vice president and director of manufacturing at the magazine.

George J. Rewick was appointed vice president of information technology at CBIS, a Cincinnati Bell company in Cincinnati. Rewick will provide senior management leadership to CBIS's efforts to address year 2000 software conversion issues. Prior to joining CBIS, Rewick held IS executive positions at Chemical Banking Corp.

Jodie N. Ray, 52, was named to the newly created position of senior vice president and CIO at Brinker International, Inc., a restaurant chain based in Dallas. Ray previously served as CIO at Texas Instruments, Inc.

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(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
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(a) Solaris (e) Mac OS
(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ☐ Yes ☐ No
Networking Products ☐ Yes ☐ No
Internet Products ☐ Yes ☐ No

4. Which of the following products do you buy, specify, recommend or approve the purchase of? (Check all that apply.)
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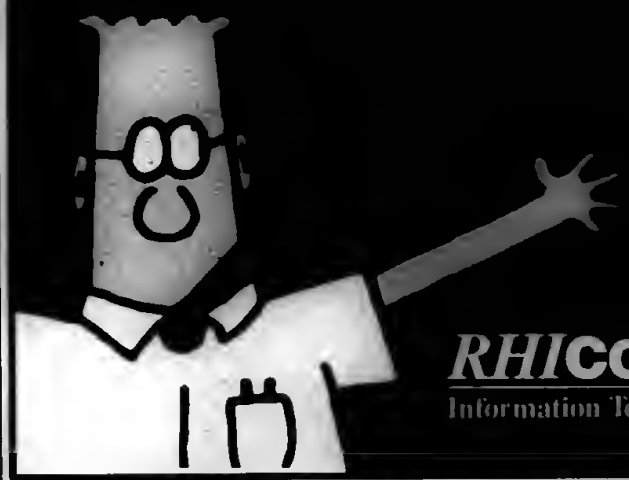

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COMPUTERWORLD FALL Campus Edition

Issue: October 31, 1997

Advertising Deadline: September 17, 1997

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Oracle	Internet App. Dev.	CICS
SQL Server	Smalltalk	Unix System admin
Informix	Cobol	NT admin
Visual Basic	IMS	Lotus Notes
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Network Analysts

Multi-protocol LAN and WAN design/support projects, TCP/IP, IPX, Appletalk, Ethernet, Token Ring, FDDI, ATM, Routers, Bridges, Network Management Tools (HP Openview, SunNet Manager, Netview 6000, Network General Sniffer)

NOS Administrators

Netware 3.x-4.x, MS Windows NT 3.51-4.0, NT BackOffice, Large scale design, implementation and support projects, Lotus Notes, MS Exchange, SMS

Qualified candidates should send their resumes with **Job Code: CPW901** to **Sprint Paranet, 1776 Yorktown, Suite #300, Houston, TX 77056, Fax: (888) 525-7476; Email: eagles@paranet.com (text format is strongly preferred.)**

Please indicate your geographic preference: **Atlanta, Austin, Boca Raton, Boston, Chicago, Dallas, Denver, Detroit, Houston, Kansas City, Los Angeles, Minneapolis, Nashville, New Jersey, New Orleans, New York, Philadelphia, Phoenix, Raleigh, Salt Lake City, San Francisco, Santa Clara, Tulsa or Washington, D.C.**

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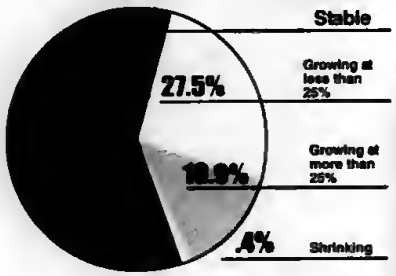
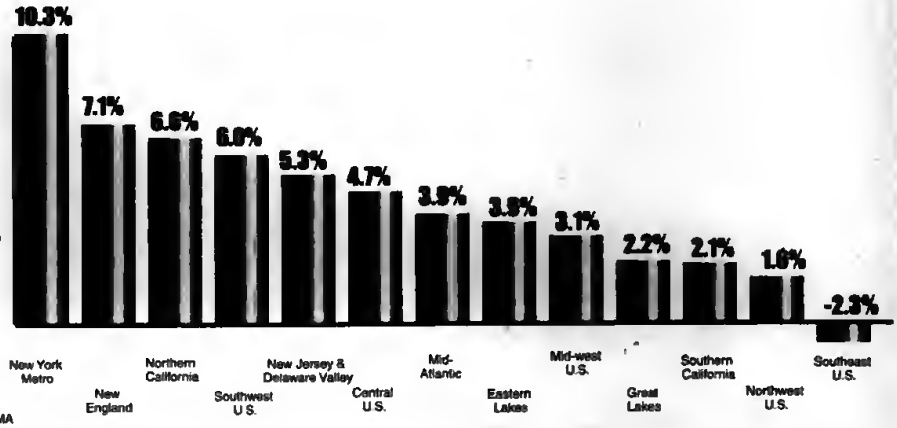


Survey Base: 278 Technology Firms involved in Test & Measurement Software

Survey conducted between June '97 and August '97.

CorpTech, a directory publisher in Woburn, Mass., tracks the U.S. 45,000 technology manufacturers. This survey relates to the 31,042 tracked firms with fewer than 1,000 employees.

Regional Growth Analysis



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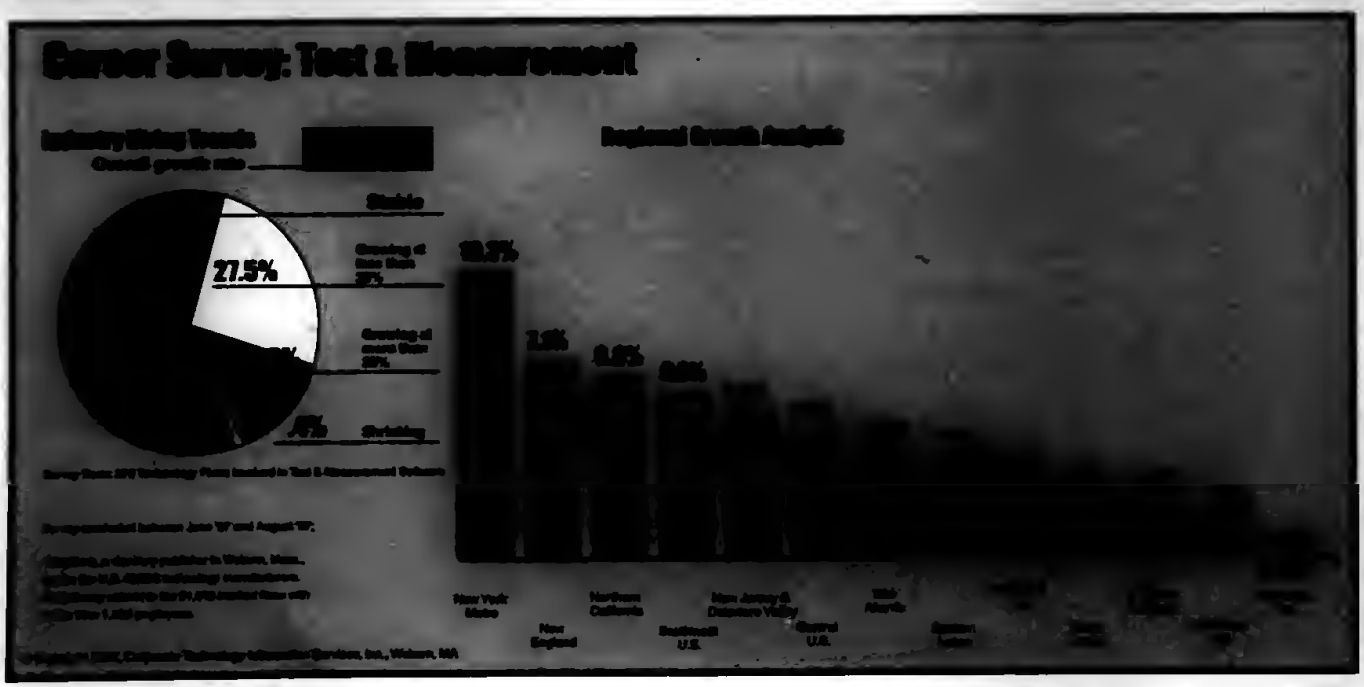

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The successful incumbent will possess 2-3 years Project Management experience, 2 years experience with ORACLE (Developer/2000) and Designer/2000 Architecture, experience with DOS, Windows 3.1, Windows 95, and Windows NT, Novell and UNIX. This person must also possess excellent interpersonal and communication skills, both written and verbal. Experience in troubleshooting and resolving client-server and end-user problems is a plus.

This position requires a Bachelor's degree in CIS or its equivalent.

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The I/S Project Leader's primary responsibilities will include defining and managing the Kellogg architecture for the ORACLE Financial applications. This would involve leading small projects or portions of larger projects and include testing and evaluation of early (beta) versions of software packages. Also responsible for managing vendor relationships and working closely with Kellogg customer services and architecture organizations to manage the internal roll out of financial applications.

This position requires a Bachelor's degree in CIS, EE or its equivalent, 3-5 years I/S experience, and experience with ORACLE Financial applications, UNIX and desktop applications.

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Positions are available for all levels of IS Auditors to perform Information Technology process reviews, data analysis, IT Attest Services, IT internal audit learning services, and IT effectiveness. Candidates should have experience with client/server applications, specifically: Oracle Financials, SAP, PeopleSoft, and/or BaaN as well as strong project management and exceptional written and verbal communication skills. Experience in management, marketing/sales and/or consulting is also essential. Accounting/IS Degree is required; CPA,CISA, and/or CIA is desired.

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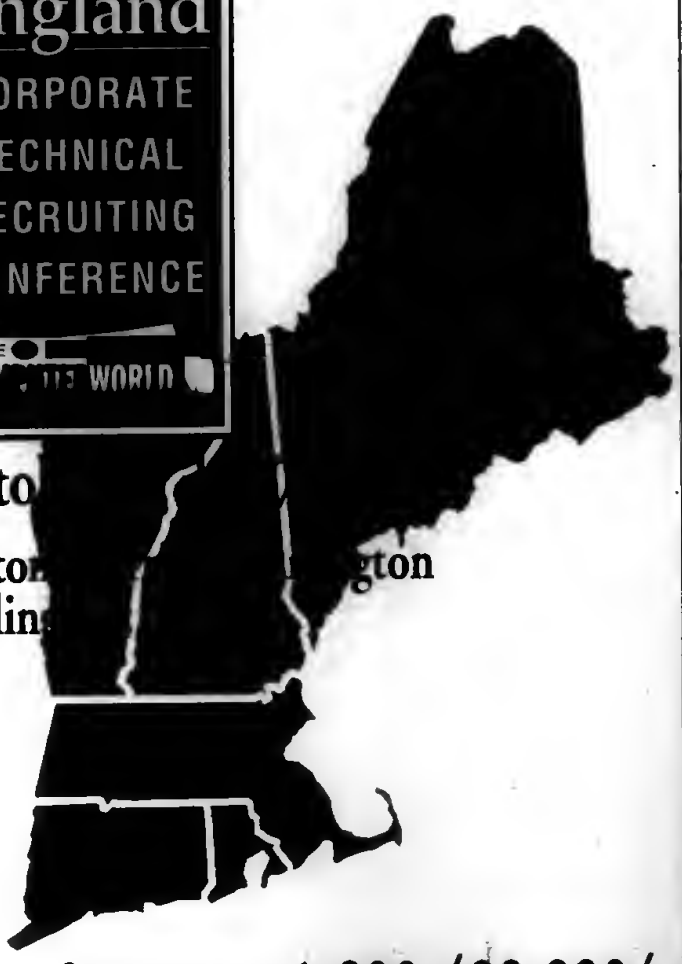

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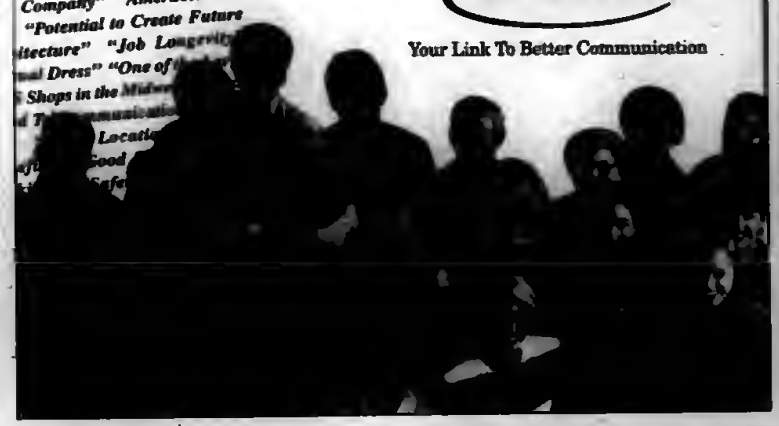

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ORACLE IMPLEMENTATION

Helena Chemical Company is one of the largest distributors of agricultural chemicals, seeds and fertilizers in North America. The company's sales force is located in more than 175 sales offices throughout the United States. Helena's Corporate Headquarters is located in Memphis, Tennessee and has approximately 150 employees. The Company has 4 sales regions, 15 divisions, and 4 manufacturing facilities.

Like many other companies today, Helena Chemical was faced with aging legacy systems, increasing support issues, and a sizable Year 2000 problem. After months of research and review, we selected Oracle Corporation's software suite as our enterprise wide solution. We currently have five development implementations initiatives:

- **Data Warehouse (using Oracle Express and Sales Analyzer)**
- **Financials (G/L, A/P and A/R)**
- **Sales Order Management (order entry, purchasing, and inventory)**
- **Manufacturing (GEMMS)**
- **Human Resources**

Helena's new client server platform is an IBM RS/6000 SP system running AIX 4.2. The initial configuration houses separate development nodes for transaction processing (financials & order management), the Data Warehouse, GEMMS manufacturing and a utility node. Future plans are to add three corresponding production nodes in a second SP frame. We are migrating from an IBM ES/9000 mainframe, running VM/SE and 140+ IBM AS/400s at our sales/retail locations. Our current communications network will be replaced with a wide area network utilizing frame relay.

The Corporate office of Helena Chemical Company has the following IS career opportunities:

Applications

Oracle Developers/Analysts
minimum 6 yrs development exp. including 2 yrs with Oracle development toolset

Technical Support:

Senior Oracle DBA
minimum 8 yrs exp. including 4 yrs administrating relational databases in AIX/UNIX environment

AIX Administrator
minimum 5 yrs exp. including 3 yrs AIX system administration

Telecommunications Analyst (voice and data)
minimum 3 yrs exp. with switch / voice mail systems and WAN utilizing frame relay

If you are interested in a challenging career move, come join our team and be part of a ground up Oracle implementation. The opportunities are unlimited for those possessing the skills to move Helena Chemical Company into the next millennium.

Helena Chemical offers competitive compensation and benefits. Interested individuals, please mail or fax your resume and salary requirement to:

Helena Chemical Company
Attn: Donna Bruce
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Systems Analyst (Principal Consultant) Develop & implement operational support systems (eg financial & distribution systems) based on RDBMS & 4GL app dev tools. Analyze clients business info flow reqs using CASE, formulate enterprise models & design & develop custom applications. Lead project teams & mentor more jr consultants. Must have BS in CS Eng (any field) Math or Bus Rsrch or statistics & min 5 yrs exp in analysis & design of bus sys apps using RDBMS technology in a Client/Server environment. More than 50% employer paid travel to client sites primarily in Texas but also thruout the US & internationally. Sr/Princ Home office in Irving, TX. Apply at the Texas Workforce Commission Dallas Texas or send resume to the Texas Workforce Commission (IJP Trinity Room 424T Austin TX 78701 JO # TX 7057290 Ad Paid by an Equal Opportunity Employer

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Consultant - 40 hours per week 8:00 A.M. to 5:00 PM $51,000 per year. Windows programming, design and analysis. Graphic User Interface Design and Development, database design and development, programming with Sun OS 4.1 Xlib Uni SQL/4GE Healthcare applications, Medical Imaging and business applications. Required: Bachelor's Degree in computer science and two years experience in the job offered. Must have proof of legal authority to work permanently in the U.S. Send two copies of resume and cover letter to: Illinois Department of Employment Security, 401 South State Street, 7-North, Chicago, Illinois 60605. Attention: Brenda Kelly, Reference # V-IL 16939-K. an employer paid ad. No calls.

Software Engineer: Implements, develops, modifies and designs an informational software system using Synon/2E CASE tools in an AS/400 mainframe computer system. Uses various AS/400 utilities and programs in RPG/400 and COBOL/400 to insure that software systems are properly integrated and are performing in accordance with systems specifications at various client sites. Develops appropriate software testing, functional documentation and performance analyses for current software systems using CASE tools; modifies software enhancements to insure integration, interface and integrity with existing systems. Requires M.S. in Software Engineering, Computer Science or any engineering field and two years experience. Please send resume to: Daniel Duffy, Effective Data Interchange, Inc., 4811 Emerson Ave. Ste 208, Palatine, IL 60067. No calls.

Programmer/Analyst (Various client based job sites Metro Dallas, TX) Development of pen based client specific applications software in VISUAL BASIC, MS ACCESS, C++, and SQL using object oriented techniques under WINDOWS operating system. Bachelor's degree in Math, Computer Science, Engineering or MIS. 0 - 1 yr exp in job offered. $48,000/yr, M-F, 40 hrs/wk, 8-5. Apply at the Texas Workforce Commission, Dallas, Texas, or send resume to the Texas Workforce Commission, 1117 Trinity Room 424T Austin Texas 78701. JO #TX0240902. Ad paid by an Equal Opportunity Employer.

Software Engineer: Designs and develops advanced security applications based on public key cryptography, including digital signatures, integrity, hashing algorithms and other complex mathematical formulations. Represents large data objects by small models, emulates and analyzes the security applications numerically and statistically, estimating the associated error or fault rates to insure that the security applications are fault free. Uses advanced optimization techniques to improve web, news, and electronic mail clients, servers, secure documents, and other internet/intranet secure communication software. Requires Master's degree in Mathematics or Computer Science. Also requires six months experience or six months experience as a Research Assistant. If experience in related field, the entire experience must be in the implementation and testing of numerical algorithms to analyze associated errors of approximation. Education to include completion of one course in Optimization. Education to include completion of one project in Artificial Intelligence including the design, implementation and statistical analysis of computer simulation. Education to include one project in representing large data objects by small models including estimation of fault rates. Hours 9:00 a.m. - 5:00 p.m. 40 hours per week at $40,000.00 per year salary. Two copies of resume to M. Brooks, File #C100138, DWE-ALC, P.O. Box 7972, Madison, WI 53707-7972.

Software Engineer: Develop new and existing algorithms for use in creating new and modified software products that are used for intranet and internet communications, information sharing, including groupware, search engine integration and database integration. Develops advanced intranet and intranet search techniques using simulation of network data link layer protocols and user interface program for compiler simulation to insure integration of such software in a networked environment. Develops pattern matching algorithms for automatic creation of information filters and topic databases. Uses Object Oriented Design in C++ and Visual C++ to perform software design. Modifies software using Win32 and Win32s API to allow products to be run on Windows NT, Windows 95 and 3.X operating systems. Requires Master's degree in Computer Science. Education to include completion of a Master's thesis in the use of algorithms for pattern matching. Education to include completion of one project in the simulation of network data link layer protocols and one project in the development of a user interface program for compiler simulation. Hours: 9:00 a.m. - 5:00 p.m. 40 hours per week at $40,000.00 per year salary. Two copies of resume to M. Brooks, File #C100135, DWE-ALC, P.O. Box 7972, Madison, WI 53707-7972.

Computer Systems Analyst - Design & develop [illegible] in a MS Windows GUI environment using knowledge of db-Vista & MS-Access relational databases, Visual Basic, and SQL. Design & develop Dynamic Link Libraries using Novell Netware & MFC libraries and Assembly & C++ languages. Conduct training classes to teach programming languages. M-F, 40hrs, overtime varies, $30-5, $50,000/yr. Requirements - Master of Science degree in computer science or electrical engineering and one year's experience in the job offered or one year's experience in the related occupation of Software Engineer. Special requirements - At least one year's experience with db-Vista and MS Access relational databases, SQL and Assembly computer languages, MS Windows GUI environment, & Novell Netware and MFC libraries. Must have proof of legal authority to work permanently in the U.S. Send 2 copies of both resume & cover letter to: Illinois Department of Employment Security, 401 S. State St., 7 North, Chicago, IL 60605. Attn: Brenda Kelly, Ref # V-IL 17191-K. No calls. An employer paid ad.

Programmer Analyst to perform business applications programming & relational database design in COBOL & C languages using SQL & Shell programming techniques under ORACLE database. Requires MBA in Business or B.E. in Computer Engineering & 2 years experience as Programmer Analyst, $47,000 per year, 40 hours per week. Send resume to Ms. J. Gaston, Division of Employment Security, P.O. Box 339, Florissant, MO 63032. Refer to Job Number 511821.

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Applications Support Manager. Applications support manager for Central Indiana based computer software development company whose products are utilized exclusively by the credit union industry. Position encompasses primary management responsibility for CUStar software applications support, operating on DEC VAX/VMS and Alpha AXP/Open VMS platforms, in PASCAL language. Core duties include EFT network development and support, conversion programming applications support, debugging, conversion project management, vendor relations, customer service and support, quality assurance and training. Requires a B.S. degree in Computer Science and/or related engineering or mathematics discipline. At least three years experience in the job offered or three years experience as a Programmer and/or Programmer/Analyst. experience must include at least 18 months of conversion programmer/analyst for credit union transaction processing software. Must have academic course work or job experience in PASCAL. 40 hrs/week, 8-5, salary $44,000/year. Applicants should send resumes with SS# to the Indiana Department of Workforce Development, 10 North Senate Avenue, Indianapolis, IN 46204-2277. Attention Gene R. Replogle, I.D.#3450583.

APPLICATION ANALYST-PROGRAMMER Plan, develops, tests and documents computer programs, applying knowledge of programming techniques and computer systems. Evaluates user request for new or modified program for financial, human resource management, clinical medical records, and Electronic Data Interchange. Reads manuals, periodicals, and technical reports to learn ways to develop programs that meet users needs and current and proposed regulatory requirements. Formulates plans outlining steps required to develop programs, using structured analysis and design. Enters programs code, test and debugs application to meet user specifications developed. Experience with Windows 95/Windows NT and RDBMS development with Microsoft visual fospro and other Visual Studio components. Minimum 1 year experience + 4 year degree in Computer Science 40 HRS./WK. $30000 ANNUAL SALARY 3 POSITIONS AVAILABLE TO APPLY: MAIL RESUME W/ COPY OF ADD TO EMPLOYMENT SECURITY DEPARTMENT J.O. #667000, ATTN DAVID HAYES P.O. BOX #2981, LITTLE ROCK, AR 72203.

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You will be responsible for MVS/OE system installation, performance, tuning and customization, problem determination and resolution. To qualify, you must have a BS Degree in Computer Science or Math plus 10 yrs. of experience in Data Processing with expert experience in MVS programming.

AIX SYSTEMS ADMINISTRATOR:

You will be responsible for AIX operating system installation, performance, tuning and customization, as well as problem solving, software evaluation and interfacing with outside vendors. To qualify, you must have a BS Degree in Computer Science or Math plus 10 yrs. of experience in Data Processing with expert experience in AIX operating system.

EXPLORATION APPLICATIONS SYSTEMS ANALYST:

You will be responsible for the critical support of exploration teams on special projects to enhance and support exploration applications. To qualify, you must have an MS degree and 9 yrs. of experience in applications support of UNIX based seismic interpretation software.

DATA BASE ADMINISTRATOR:

You will be responsible for the installation of Oracle products, database backups, security administration, error detection and resolution and performance monitoring and tuning. To qualify, you must have a MS or BS Degree in Computer Science or Math and 10 yrs. of experience in Data Processing.

EXPLORATION DATA BASE ADMINISTRATOR:

You will be responsible for the interaction and support of an exploration and petroleum engineering staff in modeling existing processes, analyzing requirements and developing software applications. To qualify, you must have a BS Degree in Computer Science, Petroleum Engineering or a related discipline and 9 yrs. of general data base processing experience.

UNIX NETWORK SYSTEMS ADMINISTRATOR:

As a member of a world class computer center, you will be responsible for system design, configuration and installation with IP network problem analysis and resolution, system tuning and customization, and total file system management. To qualify you must have a BS Degree in Computer Science or Math and 10 years of experience in MIS.

PETROLEUM ENGINEERING SYSTEMS APPLICATIONS SOFTWARE SPECIALIST:

To qualify, you must have a BS degree (MS preferred) in Petroleum Engineering or Computer Science and 12 yrs. of experience in the direct support of large reservoir emulation software systems and computer applications systems development.

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You will be responsible for the support of Saudi Aramco production and processing systems used by more than 50 seismic processing analysts in the processing of 2D and 3D seismic data. To qualify, you must have a BS degree in Geoscience or Computer Science and at least 10 yrs. of experience in the support and development of seismic processing and production systems.

NETWORK SYSTEMS ANALYST

This position provides a world class challenge in network systems analysis and maintenance. To qualify, you must have a BS Degree in Computer Science or MIS Communications and at least 10 yrs. of experience in network configuration, tuning, performance analysis, optimization and network design. The network runs Cisco Routers, Synoptic and Chipcom hubs. Experience with HP Openview, Synoptic Optivity and Cisco Works network management software is essential. Significant skill with Unix Open Windows and Solaris is also a must.

RESERVOIR SIMULATION SOFTWARE SPECIALIST:

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Change Control/Security Administrator

- Minimum 2 years' experience with HP/AIX-UNIX client server operating system, programming, and administration
- Working knowledge of BaaN, Oracle, Windows NT, and Internet
- Excellent communication skills

Job Code CCSA

UNIX Systems Programmer

- Minimum 2-4 years' as HP-UNIX system manager
- Minimum 1 year of experience with BaaN systems and Oracle7
- Familiarity with MVS interface

Job Code USP

Telecommunications Analyst

- Minimum 2-4 years' technical experience in telecommunications
- Working knowledge of voice management systems and components
- Good project management and interpersonal skills

Job Code TA

Programmer/Analysts

- Minimum 2-4 years' experience in manufacturing, financial, or administrative systems
- Good project management and communication skills
- Experience in one of the following skill sets is required:
  - COBOL II, CICS Command Level, DB2, VSAM, MVS/ESA, JCL, TSO/ISPF
  - EDI, Gentran, Premenos; C++, UNIX, and MVS interface a plus
  - Lotus Notes and Visual Basic; MVS interface a plus
  - MS Access, Visual Basic, and Windows 95

Job Code PA

PC Analyst

- Minimum 2 years' experience in PC based application integration and support
- Ability to provide and support PC platform for client server applications as well as Microsoft Office and Lotus Smartsuite applications
- Experience managing PC software and hardware assets is desired

Job Code PCSA

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(Job Code 97-0003284-AD)

The qualified individual will be responsible for creating, administering, tuning, availability, security, and management of a corporate data warehouse running on the UNIX/Teradata RDBMS. The individual will also develop and maintain database backups/archive/recovery procedures of the data warehouse, and perform physical database design and performance tuning. Requires 3+ years' DBA experience in Teradata RDBMS with over 300 GB of user data; 5+ years' RDBMS experience in Teradata and/or other merchant databases; and 5+ UNIX system background and C programming experience. Knowledge of data warehouse tools (data transformation, OLAP tools such as Microstrategy DSS) design and implementation experiences desirable. Telcom and project management experience a plus.

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FALL Campus Edition

Issue: October 31, 1997

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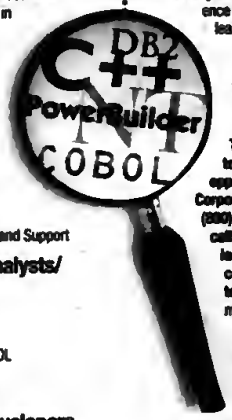

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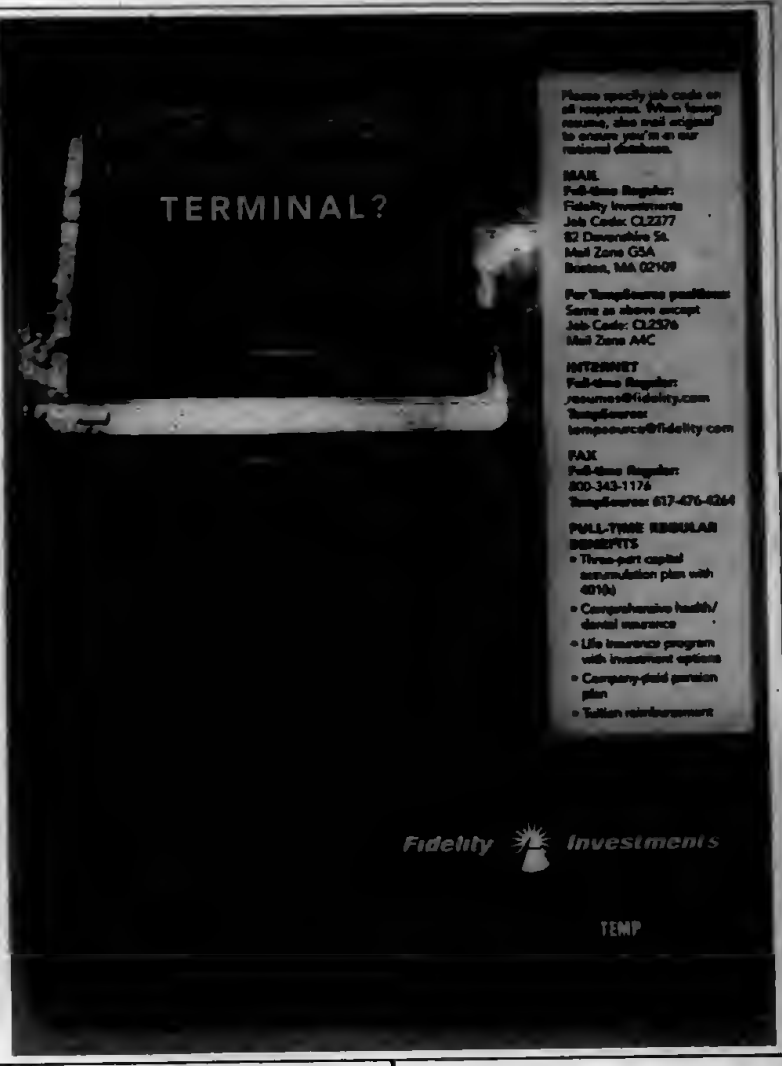

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SENIOR PROGRAMMER ANALYST

Develop application software in Visual Basic, Visual C++, and/or SQL for warehousing and distribution applications in a client/server environment. Structured programming experience, including CASE tools, and an understanding of relational database concepts are required.

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Responsible for supporting in-house PC based hardware and software applications. Requires in-depth knowledge of Windows, Windows NT and basic knowledge of Btrieve administration. Two years experience in supporting workers over a PC processing, spreadsheets, e-mail and programs on local and remote PC environment required.

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Requires 5 to 10 years project management experience in a client server environment. Must have good communication skills. Must have proven ability to define, document and lead application development projects. Will interact with all levels of company management. Bachelor's degree required. Advance degree desirable. Experience in one or more of the following required: Windows NT, AS400, and/or UNIX. Experience in manufacturing a plus.

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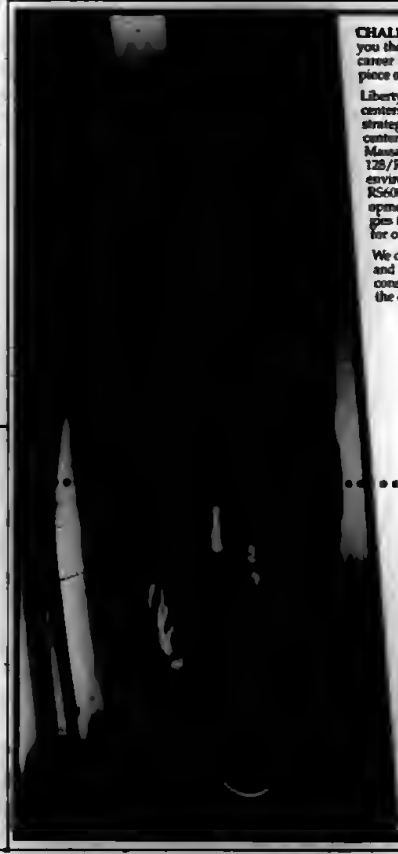

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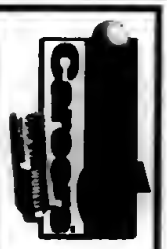

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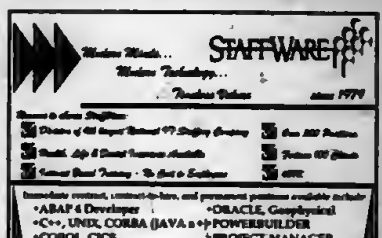

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7:45am Continental Breakfast & Conference Registration

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Connecting Your Recruiting Strategy to What the I.T. Professional Needs
Sue Keever, President, The Keever Group

Immigration Update
David P. Berry, Attorney at Law, Berry, Appleman & Leiden LLP

General Session

Candidate Selection
Dr. William S. Swan, President, Swan Consultants, Inc.

12:30pm Luncheon Keynote:
Maryfran Johnson, Executive Editor, Computerworld

Concurrent Sessions:

Connecting Your Recruiting Strategy to What the I.T. Professional Needs
Sue Keever, President, The Keever Group

Immigration Update
David P. Berry, Attorney at Law, Berry, Appleman & Leiden LLP

Town Hall Forum
Fred S. Rodriguez, Corporate Manager of H.R., Hughes Aircraft

5:30pm Program ends

Selected sessions include:

Luncheon/Keynote Address
Maryfran Johnson, Executive Editor, Computerworld
Maryfran Johnson, one of the industry's leading watchers of the information Systems profession will give you an up-to-the-minute view in this very special keynote address.

Candidate Selection
Dr. William S. Swan, President, Swan Consultants, Inc.
Now - more than ever - hiring the most productive people is critical. Yet most interviews are no better than chance at predicting how a new employee will behave on the job. In these sessions, you'll learn about the skills necessary to make accurate predictions and conduct an organized selection interview.

Connecting Your Recruiting Strategy to What the IT Professional Needs
Sue Keever, President, The Keever Group
Based on findings of research conducted with five of America's most respected corporations, you'll learn what companies are looking for in today's IT and technical professional and how they are successfully targeting candidates. In addition, findings from focus groups of IT and technical profesionals will uncover what candidates are looking for in an employer and how they go through the job search process.

Town Hall Forum
Fred S. Rodriguez, Corporate Manager of Human Resources, Hughes Aircraft
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The developer of this resource is 15 year technology pro Kevin L. Moss. Moss states, "the most pressing subject technology managers face while trying to keep up with rapid change, the Internet and Year 2000 problems is information security... professionals responsible for computer systems in their organizations do not have available resources to reference in order to learn about computer security threats and solutions. This manual combined with the Security Resource CD will provide the I.T. professional with the information and resources needed to develop their own information systems security strategies in their respective organizations." The Information Professionals Guide to Information Security and the Security Resource CD is available for $149 plus $10 shipping in the continental U.S. Credit card orders can be placed by calling Technology Advantage at (248) 443-9600. VISA, Mastercard and American Express are accepted. For more information and additional ordering information visit http://www.technologyadvantage.com.

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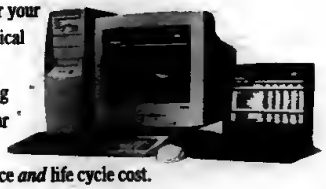

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Super Prize Sweepstakes - Winners will be selected in random drawings from all eligible entries received. Early Bird winner will be selected at a separate drawing from among all eligible entries. Sweepstakes begins 9/1/97. Drawings will be conducted on or about 4/20/98 by Ventura Associates, Inc., an independent judging organization whose decisions are final. Drawing will be held at 1040 Avenue of the Americas, New York, NY 10018. You need not be present to win.

CONSUMER DISCLOSURE: Different random presentations of the sweepstakes may present different prize choices. Values of a given prize level will be approximately the same. All prize winners will have the option of redeeming any prize offered at level won. However, estimated maximum retail value and odds of winning each prize are as follows: 1 Grand Prize - $25,000 (or cash alternative of $25,000); 1 First Prize - $2,000; 1 Second Prize - $1,000; 20 Third Prizes - $00; 1,000 Fourth Prizes - $05 each; 1 Early Bird Prize - $5,000. Total prize value $102,000.00. Contest creates presentations of the Super Prize Sweepstakes may present an Early Bird Prize. To qualify for the Early Bird Prize, if the Early Bird Prize is presented or your offer your entry must be returned by the Early Bird date specified elsewhere in this offer Odds of winning any prize are determined by the total number of eligible entries returned. Distribution of sweepstakes will not exceed 20% million. All Super Prize Sweepstakes prizes will be awarded.

Automobile, boat/trailer prizes must be picked up at local dealer. All other merchandise prizes will be shipped to winner. Boat/trailer and/or automobile title, tags, license and registration fees are winner's responsibility as are any other unstated expenses are specified in the offer. Trip prizes subject to availability and must be completed within 12 months of date awarded. Actual values of trips depend on location of winners and times of time of departure. Certain restrictions and blackout dates may apply. If a trip prize is won by a minor, minor must be accompanied by a parent or legal guardian. Winner's traveling companion will be required to sign a release of liability prior to departure. Trip prizes are on a space available basis and do not include personal purchases or incidentals. No substitution of prizes, except sponsor reserves the right to substitute a prize of equal or greater value in the event an advertised prize is unavailable.

Sweepstakes are open to legal residents of the U. S., Canada and Europe. (In those areas where made available) who have received the offer. In the event that the designated recipient of the offer has moved, the offer may not be valid in the state, country or province to which the offer has been forwarded. Void in Puerto Rico and where prohibited by law. All federal, state, provincial and local laws and regulations apply.

All prize values are in U. S. currency. On transfer of prize permitted. A winner is responsible for all taxes on his/her prize.

Canadian residents, in order to win, must first correctly answer a time-limited skill testing question administered by mail. Any litigation regarding the conduct and awarding of a prize in this publicity contest by a resident of the province of Quebec may be submitted to the Régie des alcools, des courses et des jeux.

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Winner will be determined in a random drawing on or about 9:00 am (EST) the Monday following the issue date. You need not be present to win. The prize (and the retail value) detailed with the entry form is guaranteed to be awarded & delivered to winner approx. 30 days from drawing date. If notification letter or prize is returned undeliverable, it will be awarded to an alternate winner at random. The prize substitutions except due to unavailability, in which case a prize of equal value will be awarded. Prizes not transferable or redeemable for cash. All taxes on prize are winner's responsibility. Acceptance of prize constitutes permission (except where prohibited) to use winner's name, hometown & likeness for promotional purposes without additional compensation.

Sweepstakes is open to legal US residents, 18 & older. Odds of winning determined by total number of entries received. Est. distribution: 100,000. Sponsor: Computerworld, Inc. 500 Old Connecticut Path, Framingham, MA 01701. Employees of Computerworld, Inc., its affiliates, subsidiaries, retailers, advertising & promotion agencies & immediate families of each are ineligible. All federal, state & local laws & regulations apply. Void in Puerto Rico & where prohibited by law.

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STOCK TICKER

The Week in Stocks

Gainers

PERCENT

Excite, Inc	58.0
Pinnacle Micro Inc.	54.5
Infoseek Corp.	49.5
Learning Co. (The)	33.3
Apple Inc	25.7
ParcPlace Systems Inc.	25.0
Centigram Communications	24.7
Badge Networks NV	23.4

DOLLAR

Excite, Inc.	8.63
Lycos Inc (H)	4.38
Data General Corp.(H)	4.00
Learning Co. (The)	3.63
Computer Horizons	3.63
Sungard Data Systems	3.63
Micrognge Inc (H)	3.53
Yahoo! Inc.	3.50

Losers

PERCENT

Ceridian Corp.	-19.4
Computervision Corp.(L)	-16.7
Mapinfo Corp.	-13.8
Creative Technology Ltd.	-12.0
NEC America	-11.0
Intelligent Info. Systems	-9.5
Advanced Micro Devices	-9.3
Ascend Communications	-9.3

DOLLAR

Ceridian Corp.	-8.38
NEC America	-7.00
Motorola Inc	-6.69
Texas Instruments	-4.63
Ascend Communications	-4.31
Advanced Micro Devices	-3.88
Xilinx	-3.75
Lucent Tech.	-3.69

INDUSTRY ALMANAC

What's in store for storage?

Market watchers say long-term investors should store their money where they put their data — in computer storage systems stocks.

The sector — which is made up of component, disk drive and disk and tape subsystem makers — has shown steady growth and strong prospects as businesses continue to demand more storage for their growing data loads.

"We maintain an extremely bullish outlook for storage subsystems in the long term," says John Dean, an analyst at Salomon Brothers, Inc. in San Francisco, in a recent report. "Processing power will continue to enable data manipulation on an ever-growing scale, driving overall demand for storage."

"The storage sector has become more strategic," says Glenn Hanus, an analyst at Needham & Co. in New York. "And just the way EMC Corp. [NYSE:EMC] has become profitable, it is self-evident." But the path to prosperity isn't smooth.

Slowing demand and the typical summer slowdown have hit PC-related storage stocks, including those of disk drive head maker Read-Rite Corp. (Nasdaq:RDRT); removable drive and tape cartridge maker Iomega Corp. (NYSE:IOM); and disk drive maker Western Digital Corp. (NYSE:WDC).

But analysts say strong management has offset temporary setbacks, seen in the companies' continued strong quarterly results year to year (see chart). On the high end, mainframe and midrange storage providers have felt little of the PC-related drop. But even market leader EMC and companies such as Storage Technology Corp. (NYSE:STK) are trying to diversify from their hardware offerings to boost short-term earnings.

EMC, in Hopkinton, Mass., expanded its software offerings to make up 7% of its revenue this year. And StorageTek, in Louisville, Colo., is moving beyond its core mainframe tape systems to include LAN-related tape devices, services and niche offerings such as its MediaVault system for broadcasters.

— Tim Ouellette

TAKE STOCK OF STORAGE SHARES

Although stock prices for storage may fluctuate – especially among PC-related shares – earnings per share have been steady

	Earnings per share	
Vendor	June 1996	June 1997
EMC	$0.36	$0.47
Iomega	$0.11	$0.17
Storage Technology	$0.65	$0.81
Western Digital	$0.36	$0.98

Source: Needham & Co., New York.

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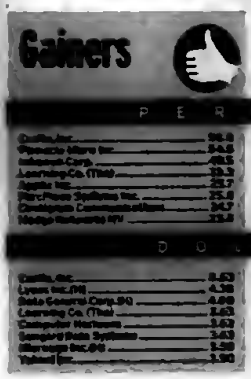
The Week in Stocks



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Source: Needham & Co., New York.

Exch	52-Week High	52-Week Low		Aug. 29 Price	Wk Net Change	Wk Pct Change
COMS	61.38	24.00	3 COM Corp	38.94	1.19	0.0
AIT	73.75	00.63	AMERITECH Corp	62.31	2.25	3.3
ASND	00.25	36.13	Ascend Communications	42.11	-4.31	9.3
T	62.63	50.75	AT & T	59.00	-0.81	1.0
BNYN	6.50	1.16	Banyan Systems Inc	2.31	-0.13	5.1
BAY	37.75	15.36	Bay Networks Inc	34.94	-0.44	1.2
BEL	78.25	55.19	Bell Atlantic Corp	75.31	0.19	0.2
BLS	48.81	35.25	Bellsouth Corp	44.00	-0.50	1.1
BRKT	42.25	9.25	Bibliotheque Technology	11.00	1.94	20.3
CS	46.50	27.00	Cabletron Systems	30.63	-0.94	3.0
CGRN	17.50	8.63	Centigram Communications	16.00	2.00	24.7
CSCO	83.25	45.25	Cisco Systems Inc	75.63	-0.19	-0.3
CMNY	7.00	5.31	Computer Network Tech	5.25	0.69	15.1
DIGI	31.00	12.63	DSC Communications	29.19	1.25	4.5
FORE	43.81	10.00	FORE Systems Inc	20.75	1.69	8.8
GDC	12.50	3.09	General Datacomm Indus. (L)	7.25	0.69	10.5
GSX	33.00	16.13	General Signal Networks	18.94	-0.58	2.8
GTE	48.88	37.73	GTE Corp	44.38	1.25	2.8
LU	90.75	38.25	Lucent Tech	77.41	3.69	4.5
MADGF	18.13	4.50	Madge Networks NV	8.25	1.88	29.4
MCIC	43.38	23.00	MCI Communications Corp	28.81	0.81	2.7
NETM	5.88	2.50	NetManage Inc	3.13	0.38	2.8
NTBY	8.50	1.44	Netsite Corp	2.31	0.34	17.5
NCDI	16.23	4.63	Network Computing Devices	11.63	1.94	17.0
NWK	22.50	11.13	Network Equipment Tech	18.81	-0.44	-2.3
NETG	30.25	11.13	Network General	18.50	0.38	0.0
NN	32.44	38.50	Newbridge Networks Corp	45.38	-0.88	1.9
NT	107.10	48.50	Northern Telecom Ltd	89.13	0.31	0.3
NOVL	13.08	6.28	Novell Inc	8.41	1.16	14.4
OCTL	31.75	13.50	Octel Communications Corp	30.57	0.00	0.0
ODSI	24.25	8.75	Optical Data Systems Inc	10.56	0.38	0.6
PCTL	37.88	8.25	Picturetel Corp	12.31	1.00	8.8
PTON	4.25	1.31	Proxicom Inc	1.88	-0.38	3.6
RACO	8.88	1.88	Racotek Inc	2.31	0.00	2.8
RETA	9.25	3.56	Reta	6.19	0.44	1.8
SBC	62.25	44.88	SBC Communications	54.00	-0.38	1.0
SFA	34.94	12.38	Scientific Atlanta Inc	21.44	-0.44	2.0
SHVA	63.50	8.25	Shiva Corp	14.38	2.38	21.1
FON	52.33	37.30	Sprint Corp	46.81	0.25	0.5
SMSC	35.25	6.25	Standard Microsystems Corp	10.81	-6.35	-2.8
USW	39.44	27.25	U S West Inc	35.00	-0.38	-1.5
XIRC	31.13	7.00	Xircom	14.13	-0.38	-2.6
XYLN	58.88	12.38	Xylan Corp	30.44	1.00	0.0
AAPL	29.16	12.75	Apple Computer Inc	21.75	-2.38	-8.7
CPQ	68.75	28.50	Compaq Computer Corp (M)	65.00	0.63	1.0
DELL	87.94	15.75	Dell Computer Corp	82.31	-0.94	-1.1
GTW	68.25	16.38	Gateway 2000 Inc	59.38	-0.88	2.2
HWP	71.50	42.50	Hewlett Packard Co	62.38	-0.38	-1.1
MUEI	25.38	13.63	Micron International Inc.	18.25	-0.94	2.3
NIPNY	18.88	52.50	NECAmerica	56.75	7.00	11.0
SGI	28.81	12.63	Silicon Graphics	27.75	1.31	0.0
SUNW	53.81	25.50	Sun Microsystems Inc	48.16	-2.06	-4.1
ABHI	14.00	8.13	Abbatt Corp	12.81	0.38	0.0
DGN	37.25	19.25	Data General Corp (M)	30.75	4.00	12.3
DEC	47.81	35.00	Digital Equipment Corp	42.38	2.44	5.4
IBM	109.44	51.81	IBM	101.88	1.56	1.5
MDCD	9.63	0.88	Meridian Data Inc	4.25	-0.15	-2.6
NETF	4.88	0.88	NetFrame	0.97	-0.06	5.1
PRCM	20.11	0.00	ProCom Technology Inc.	10.81	-0.15	1.3
SQNT	31.25	10.73	Sequent Computer Sys.	28.38	0.38	2.3
TERM	1.88	2.00	Sequoia Systems Inc	2.81	-0.06	-2.2
SBA	37.25	17.23	Storage Computer Inc	35.00	2.38	8.5
TDM	35.88	10.25	Zambeel Computers Inc. (N)	34.44	0.38	1.8
MTI	11.81	5.75	Unisys Corp (M)	11.88	0.75	6.7
ADBE	69.00	31.56	Adobe Systems Inc	38.16	-2.44	5.9
AMSWA	12.25	8.63	American Software Inc. (M)	10.63	-0.56	-5.0
APLX	40.88	3.13	Applix Inc	11.00	2.25	25.7
ARSW	45.88	17.00	Arbor Software	38.38	1.63	-4.0
ADSK	47.00	31.00	Autodesk Inc	43.13	-2.50	2.3
BGSS	32.38	30.00	BGS Systems Inc	29.00	-2.75	-8.7
BMCS	65.75	38.75	BMC Software Inc (M)	62.75	0.13	0.2
BOOL	37.81	11.61	Boolean Boolagic	25.00	-0.75	-2.9
BORL	6.81	0.75	Borland Int'l Inc	0.88	0.09	0.0
BOBY	90.50	6.63	Business Objects	7.81	0.88	12.0
CAYN	6.25	2.00	Cayenne Software Inc (L)	2.63	0.38	16.7
CNTR	5.88	1.13	Centura Software	1.50	-0.38	5.9
CHKP	18.25	13.63	Checkpoint Software Technologies	15.88	0.00	0.0
COGNF	16.88	21.38	Cognos Inc	21.38	1.13	3.7
CA	71.81	37.25	Computer Associates	66.31	1.69	2.6
CVN	10.88	2.38	Computervision Corp (L)	2.50	-0.00	36.7
CPWR	65.25	20.25	Compuware Corp (M)	51.88	1.13	1.8
CSRE	19.00	8.00	Corepro Inc.	6.16	0.38	-0.8
COSFF	19.75	5.00	Cosec Corp	5.94	0.38	1.1
DWTI	6.63	2.25	Dataware Technologies Inc.	3.13	0.25	8.7
FILE	56.50	9.38	Fourth Corp	17.88	-0.31	1.7
FRTE	47.00	7.25	Forte Software	13.38	-0.10	-3.6
FTPS	8.75	3.38	FTP Software Inc	5.31	0.25	7.0
HUMCF	41.63	22.00	Hummingbird Comm Ltd	38.25	0.38	1.0
HYSW	58.25	12.00	Hyperion Software Corp (M)	49.38	0.00	0.0
IFIC	18.23	11.13	Information Resources	18.13	0.81	4.7
IFMR	31.13	6.56	Informix Corp	8.09	-0.00	-0.0
INGR	12.63	6.25	Intergraph Corp	9.75	-0.13	1.3
LEAF	3.73	0.81	Interleaf Inc	3.34	0.34	17.5
ISLI	17.00	8.25	Intersolv Inc	15.63	0.88	5.9
INTU	40.25	20.88	Intuit Inc	40.63	2.50	10.1
TLC	25.75	3.00	Learning Co. (The)	14.00	5.63	89.5
LGWX	10.23	4.13	Logic Works	7.75	-0.25	3.1
MAPS	13.00	7.00	Mapinfo Corp	10.11	1.38	13.6
MATH	7.00	3.19	MathSoft	2.94	0.00	1.1
MCAF	28.50	20.56	McAfee Associates	27.13	1.38	5.4
MENT	14.00	8.00	Mentor Graphics	11.25	1.69	16.8
MFGY	36.38	30.63	Micro Focus	33.25	-0.38	1.1
MCSI	12.25	4.00	Microstrategy Inc	7.50	-0.38	-0.8
MSFT	150.73	60.38	Microsoft Corp	132.00	-2.13	1.9
ORCL	62.13	22.50	Oracle Corp	57.81	1.75	-4.4
PMTC	64.25	17.50	Parametric Technology	46.15	-2.38	-4.8
PARQ	4.00	0.88	Pure Data Systems Inc	1.25	0.25	25.0
PSFT	66.13	30.63	Peoplesoft	55.38	-0.88	3.2
PTEC	19.75	11.00	Phoenix Technologies	15.25	0.13	-0.8
PSQL	13.75	6.88	Platinum Software	10.75	-0.63	0.6
PLAT	24.25	10.13	Platinum Technology (M)	23.50	1.38	6.3
PRGS	25.00	12.63	Progress Software Corp	17.81	-0.31	1.7
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REDB	38.00	3.00	Red Brick Systems Inc	10.25	-0.19	1.8
ROSS	6.75	1.75	Ross Systems, Inc	3.88	0.25	6.9
SAPE	64.00	00.00	Sapient Corp	30.25	0.25	0.8
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SOTA	15.38	8.00	State of the Art	14.00	1.63	13.1
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SNPS	50.00	21.75	SynOpsys	34.63	-0.25	-0.7
SSAX	17.00	3.00	System Software Assoc	13.11	0.83	4.3
SYSF	30.00	7.38	Systemsoft Corp	8.69	-0.25	-2.8
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VMSB	10.00	0.50	VMARK Software Inc.	0.44	0.00	3.9
WALK	56.25	10.38	Walker Interactive Systems	14.13	1.00	7.6
WALL	00.13	13.25	Wall Data Inc.	17.38	0.00	0.0
WANG	30.00	16.00	Wang Laboratories Inc	18.75	-0.13	-0.6
AMZN	30.88	15.75	Amazon.com	38.11	2.63	10.3
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EDFY	25.75	0.88	Edify Corp	14.38	1.38	3.9
XCYT	23.38	5.00	Excite, Inc	23.38	8.63	58.0
INEX	11.38	6.00	Infoseek Corp	8.88	3.94	49.9
LCOS	34.00	6.00	Lycos Inc. (M)	31.13	4.38	16.0
NETC	23.50	3.88	Netcom On-Line	23.31	0.81	0.5
NSCP	38.00	23.56	Netscape Comm. Corp.	39.56	3.19	0.8
OANET	25.50	0.56	Open Market Inc	10.81	1.00	30.2
PSIX	34.50	3.50	PSINet	8.00	0.88	0.0
QDEK	8.88	0.50	Quarterdeck Corp	2.38	0.50	0.0
RAPT	38.75	8.88	Raptor Systems	14.00	2.19	18.5
SCUR	14.50	4.75	Security Computing Corp	5.88	0.16	2.3
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YHOO	68.50	16.25	Yahoo! Inc	58.38	3.50	6.4
AMD	30.00	13.13	Advanced Micro Devices	27.63	-3.00	-9.7
ADI	26.22	27.13	Analog Devices Inc	23.13	-0.94	-2.8
CHPS	26.50	7.88	Chips and Technologies	10.81	-0.19	1.7
CRUS	26.25	8.00	Cirrus Logic	13.13	2.25	15.1
CY	17.88	10.00	Cypress Semiconductor Corp (M)	13.13	1.50	9.2
CYRIX	30.00	31.00	Cyrix	28.13	0.00	0.0
INTC	100.00	38.25	Intel Corp	92.56	1.75	1.9
LSCC	21.63	24.00	Lattice Semiconductor	63.00	-1.75	-2.8
LSI	46.88	20.13	LSI Logic Corp.	52.31	-0.63	-1.2
MCRL	26.50	8.88	Micrel Semiconductor Inc. (M)	00.00	2.50	7.8
MU	00.06	00.38	Micron Technology	46.50	-0.13	-0.3
MOT	90.50	38.13	Motorola Inc	75.56	-4.00	0.0
NSM	37.38	13.00	National Semiconductor	24.00	-0.19	-0.8
TXN	131.31	43.00	Texas Instruments	114.56	-4.63	-3.8
VLSI	26.50	12.00	VLSI Technology (M)	12.75	1.06	7.4
XLNX	58.50	09.00	Xilinx	48.15	-3.75	-7.2
ZLG	25.00	14.88	Zilog Inc	24.44	0.25	0.0
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CREAF	25.25	9.29	Creative Technology Ltd.	19.25	-2.63	-12.0
DACE	24.00	0.88	Data Race Inc.	7.31	-0.00	-0.0
DTM	12.50	6.75	Datamen Corp	8.75	0.06	0.0
EMC	54.50	30.38	EMC Corp	31.19	-0.81	-1.2
EMUL	21.25	13.25	Emulex Corp	15.50	-0.38	-2.4
ESCC	30.75	25.00	Exabyte Int. Switzerland (N)	00.00	-0.38	-1.2
EXBT	17.38	8.06	Exabyte Corp	11.24	0.97	8.9
IISLF	0.88	1.13	Intelligent Info. Systems	1.19	-0.13	-9.8
IOM	27.00	11.00	Iomega Corp	25.75	3.44	15.4
IPLS	2.75	0.88	IPL Systems Inc.	1.75	0.00	3.7
KMAC	36.75	15.31	Kronos Inc	17.00	0.00	2.2
MTSI	34.00	13.00	Micro Technology Corp. (N)	31.63	0.00	2.6
MTIC	0.88	1.00	MPI Technologies Corp. (N)	0.25	0.88	5.7
PMCL	8.75	0.59	Pinnacle Micro Inc.	1.88	0.88	94.0
AQM	0.88	2.38	QMS Inc	3.00	-0.25	0.1
QNTM	37.00	7.13	Quantum Corp	35.31	0.31	0.0
RDUS	2.19	0.19	Radius Inc	0.88	-0.03	-0.9
SEC	30.09	22.88	Seagate Technology	30.19	2.38	-0.9
SOTS	10.38	0.75	Storage Computer Corp	12.63	-0.13	-1.0
STK	54.38	33.00	Storage Technology	51.06	0.88	0.6
TBL	25.50	17.00	Tricord Systems Inc.	16.50	0.69	1.2
WDC	34.75	16.75	Western Digital Corp	18.15	-2.10	-4.3
XRIT	00.00	44.00	Xetron Corp	75.38	0.13	0.2
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CFIN	53.13	29.00	Ceridian Corp	34.88	-3.88	-10.0
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CSC	38.00	27.00	Computer Sciences	28.88	-0.94	-1.5
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CDAT	28.63	12.75	Control Data Systems Inc.	20.25	0.25	3.3
EGGS	8.38	5.63	Egghead Discount Software	8.88	0.88	5.6
EDS	43.38	27.75	Electronic Data Systems Corp	37.44	0.00	0.0
INAC	40.63	28.75	Ingram Corp	33.38	-0.63	-1.7
INEL	10.75	2.50	Intelligent Electronics	4.13	0.88	11.9
IEA	70.00	00.00	Ogden Inc	58.63	2.13	3.8
MICA	38.50	33.31	Micronics Inc. (M)	28.97	2.33	13.0
PAYX	42.50	25.88	Paychex	33.00	-0.88	-2.5
PMS	60.25	33.75	Policy Management Sys. (N)	60.25	2.31	4.0
REY	30.25	23.75	Reynolds and Reynolds	28.13	0.88	4.3
SCBI	27.00	16.00	SCB Computer Tech. Inc	26.25	0.63	0.0
SEIC	30.00	18.75	SEI Corp	28.75	0.88	2.7
SMED	61.75	28.75	Shared Medical Systems	48.88	0.63	3.3
SSPI	53.00	10.00	Software Spectrum Inc.	14.88	0.38	2.6
SDS	54.25	37.00	Sungard Data Systems	52.19	2.63	5.3
VST	29.75	8.50	VanStar Corp	15.19	0.19	1.3

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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Users say SAP may be overreaching

By Randy Weston
ORLANDO, FLA.

SAP AG WANTS to spread R/3 to all corners of the corporate computing environment, but some users want to keep it at bay for now.

Users' main concern is that SAP is trying to be all things to all people. "We would like R/3 to be all things, but we don't think it's possible," said Robert Pascuzzi, director of information technology at Sharp Electronics Corp. "You can get into trouble when you go beyond your core competencies."

Indeed, SAP is spreading beyond its core areas of expertise: logistics, finance and human resource management software. SAP officials said the idea is to stretch R/3's functionality to cover all business processes, from a product's inception to its purchase by consumers.

So far, that includes adding a data warehouse to R/3, enhancing R/3's electronic-commerce functions and extending its supply-chain management capabilities to include advanced planning optimization.

"These enhancements exemplify SAP's commitment to own the entire supply chain, from product conception to customer delivery," said Clare Gillan, an analyst at International Data Corp. in Framingham, Mass. "The question is how far can SAP extend itself successfully."

SAP officials said that limit exists but wouldn't specify where it is. They said enhancements to R/3's architecture — including SAP's decision to release new applications as components that can be installed or upgraded incrementally — are "the basis of managing the growth" of R/3 within a firm.

Would like SAP's R/3 to be all things, but he doesn't believe that is possible

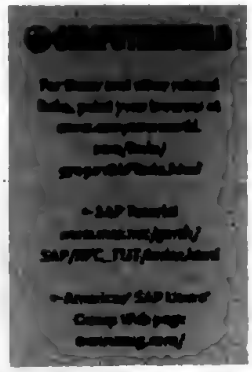
But even if SAP provides a way to retain control over R/3's ever-expanding presence, integration with R/3 doesn't guarantee users will want the products.

Although most analysts agree that SAP's core human resources, logistics and financial management applications are among the best on the market, its track record in the new areas it has chosen is unproven.

Officials at Panasonic Corp. and its parent company, Matsushita Electronic, Inc. in Secaucus, N.J., aren't concerned about relying too much on one vendor. But they are concerned that using only applications that are integrated with R/3 may leave them with second-rank tools.

"We don't care if it's SAP or Oracle that comes up with a better data warehouse. We are going to invest in the best tools," said Earl Kiesel, assistant general manager of Panasonic's financial division. "If it's integrated, great. If not, that's fine, too. We are going to look at the cost-effectiveness and functionality first." □

Consultants use preset business processes to install SAP, Baan, others. Page 53



'net discounts cut costs

CONTINUED FROM PAGE 1

Under a fee plan that goes into effect next month, Fidelity Investments in Boston will charge $138.95 to trade 1,000 shares of a $30 stock by telephone and just $28.95 on the Web. "We're more aligning our commission with our costs," said spokesman Teri Kilduff. The existing structure offered a 25% discount on Web trades instead of the flat $28.95 fee for a trade of up to 1,000 shares.

And if you would like to buy a copy of Microsoft Corp.'s FrontPage 98 beta CD, the charge is $9.38 if ordered by telephone or fax but $6.48 if you buy it online.

NO HUMAN COST

"It makes sense," said Jim Balderston, an industry analyst at Zona Research, Inc. in Redwood City, Calif. "If you don't have to involve a human ... you're going to save money."

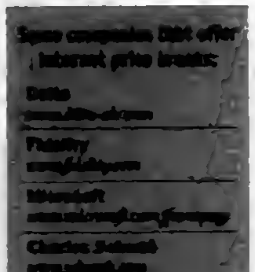
Microsoft's beta CD pricing policy is based on the actual cost of order processing, said Pat Kirtland, group product manager for FrontPage. Phone orders cost more than anticipated, because "once people are on the phone, they start asking questions," he said.

There was a similar price plan for last year's FrontPage beta CD, and about one-third of customers decided to order online. This year, 90% ordered from the Internet.

Web orders are extremely attractive to airlines, where direct sales mean they don't have to pay fees to travel agents or industrywide computer systems such as the Sabre network. Those orders also enable "ticketless travel," which saves the cost of printing, mailing and processing paper tickets.

Online orders also save the cost of toll-free phone lines and the people it takes to staff them.

To encourage customers to go along, Delta Air Lines offers frequent-flier miles for booking online. The airline just ended its first Web sales promotion, a $99 companion ticket available only on the Internet.



"Growth in online purchase is pretty healthy," said Ken Boyle, Delta's manager of electronic commerce in Atlanta. Delta already has plans to boost the Internet connection from a T1 to T3 line.

At Charles Schwab & Co., which has long offered Web discounts, money in online accounts has climbed from 14.5% of the firm's total in June 1996 to more than 20% this July.

For information systems departments, it can be difficult to predict system load when the whole arena of electronic commerce is still so new. □

Insurers plan Y2K limits

CONTINUED FROM PAGE 1

have to pay the bill" for damages that some observers estimate could reach hundreds of billions of dollars, said Nancy P. James, owner of N. P. James Insurance Agency in Concord, Mass.

Even one of the nation's largest insurance firms, the Prudential Insurance Company of America, is having a hard time figuring out whether its existing corporate insurance will cover any computer downtime or lawsuits against top executives, said Irene Dec, vice president of information technology at the Newark, N.J.-based insurer.

Prudential's corporate risk unit has spent five months trying to figure out "whether we'll need to purchase any additional" year 2000 insurance, said Dec, who is overseeing the company's millennium conversion project. The group plans to present its findings in another two months. But early research has indicated that some insurance companies are excluding year 2000 from policies designed to protect corporate officers from personal liability, she said.

WE DON'T COVER THAT

To protect themselves from exposure to year 2000 claims, a number of insurers have asked Insurance Services Office, Inc. to develop endorsements to general property and liability policies explicitly stating that the policies don't cover year 2000 damages, said Christopher Guidette, a spokesman for the New York-based firm, which provides pricing and underwriting information to insurance companies and standard policy forms for common types of insurance.

It will be next spring before the endorsements are written, approved by state regulators, adopted by insurers and ready to go into effect, Guidette said. He declined to name insurers that have asked for the changes, but he said there is strong interest in the changes, which would also allow insurers to offer separate year 2000 policies.

The endorsements wouldn't affect more specialized insurance, such as directors and officers coverage designed to protect executives from personal liability for corporate actions, or errors and omissions coverage aimed at information technology operations, Brower said.

But insurers also might apply "blanket-type" year 2000 exceptions to such specialized insurance if the risks become too great, said Robert Omahne, executive vice president of AIG Risk Finance in New York. That apparently is what Prudential researchers are uncovering.

Like many of those heading year 2000 remediation efforts, Janet Burns, project manager at Bernard C. Harris Publishing, Inc., a publisher of alumni directories in Norfolk, Va., doesn't know much about the types of insurance her employer carries. She recently attended a year 2000 conference and said, "I remember communicating to management that [insurance coverage] was an issue ... but we have not pursued that at all." □ — *Thomas Hoffman contributed to this report.*

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COMMENTARY

Microsoft crashes Java dance party

Dan Gillmor

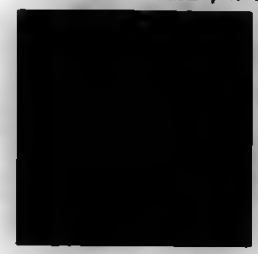
"I love the Java jive and it loves me" — from "Java Jive," by Ben Oakland and Milton Drake.

The computer industry is good for an occasional chuckle. I've enjoyed several lately, as some observers have expressed surprise that Microsoft is doing what has been obvious for at least a year: working

feverishly to derail one car on the Java Express while it hijacks the rest.

This makes perfect sense for Microsoft even if it annoys some IT professionals. "Write once, run everywhere" is the dream of people who deploy and use technology. But it's a nightmare for a company whose monopoly power Java still may threaten — unless "everywhere" means Windows everywhere.

Paul Maritz, Microsoft's group vice president, removed any doubts about the company's intentions in a recent interview with *Computerworld* (CW, July 28). He explained why Microsoft won't ship Sun's Java Foundation Classes with Microsoft's version of the Java Virtual Machine (JVM) or related software. "It's a competing operating system," Maritz said. You have to appreciate such candor.



Similarly, you have to acknowledge how effectively Microsoft has moved to stave off the Java challenge. Here was a technology that combined an excellent programming language with the potential for cross-platform ubiquity. At first, Microsoft seemed confused, or at least conflicted, by Java. Then a strategy emerged: Praise the language and make it Microsoft's own if possible, but undermine the cross-platform notion. How to make Java just another Windows programming language? Make Java run best on Windows and create programming tools with Windows-specific features. Microsoft has done both. Its 32-bit Windows JVM, by wide agreement, is in the top tier (and its Apple Macintosh JVM is no dog, either). It's certainly faster and less buggy than Netscape's.

Meanwhile, Microsoft was creating Visual J++. Then the company introduced J/Direct, which let developers write applications with direct hooks into the Windows APIs. Why would developers do this if write once, run everywhere was the goal? Because, as the line accurately goes, today's reality is "write once, debug everywhere."

The continuing inability of Sun and its anyone-but-Microsoft partners to write JVMs that work the same from one browser or operating system to another was just what Microsoft needed to claim that ubiquity is a mirage and thus developers should take advantage of Java's manifest strengths on the most widely deployed platform — Windows.

Then came the Apple deal. Apple's agreement to make Internet Explorer the default browser dovetailed with an agreement that Apple would work on Java technology with Microsoft. As Apple's Steve Jobs said with only slight hyperbole, Apple plus Microsoft equals 100% of the desktop market, so between them, they'll set the Java desktop standards. Anyone want to bet which of the "partners" will have more clout in standards?

Maybe Java will achieve cross-platform success on smart cards, cellular telephones, network computers and a new generation of information devices. On today's desktop, it's a long way from reality. If IT wants true cross-platform Java on desktops, it will have to push Sun, IBM, Netscape and the other members of the 100%-pure crowd to do a much better job with their own development tools and JVMs. Right now, Microsoft is close to owning Java in its key markets. □

Gillmor is computing editor at the San Jose Mercury News. *His Internet address is dgillmor@sjmercury.com.*

Just-in-time unbundling

David Moschella

When Lotus announced it would offer "extremely tight integration" between Microsoft's Internet Explorer 4.0 and the next major release of Notes, the cooperation between vendors struggling against Microsoft reached an all-time low.

It was almost unimaginable that Netscape and Lotus would let their groupware competition spill over into the browser business to the benefit of both companies' archrival. It made Netscape's and Novell's fallback formation of Novonyx look like bold leadership. The folks in Redmond couldn't help but laugh.

But like a lost soul that needs to hit rock bottom before it can begin to recover, the Lotus debacle seems to have finally awakened the folks in Mountain View. Just 20 days later, Netscape unbundled Navigator 4.0 and announced its "Netscape Everywhere" initiative, aimed at delivering "more than 100 million copies of Netscape software to home users over the next 12 months."

Although that goal is unreachable, setting it represents great progress. Netscape has spent most of the past year doing its best to give the impression that neither browsers nor the consumer market really mattered.

Why it acted that way, I'll never understand. Given today's huge base of PCs, it will be many years before most users even think about an integrated browser and operating system. So stand-alone browsers will be critical in the decisive years of such important new technologies as streaming media, three-dimensional imaging, "push" software, Java and any new network computer or non-PC devices that might catch on.

Netscape now says that unbundling Navigator was the plan all along. If so, the company sure picked a confusing and ineffective way to communicate its strategy. Netscape let itself be seen as fighting today's prevailing thin-client metaphor and arrogantly ignored the clear evidence that many customers and partners didn't need or want everything that comes with Communicator.

The truth is that an unbundled browser is still Netscape's single most compelling product. If Microsoft has a weakness, it's found on the flip side of its installed-base strengths. It will be increasingly difficult for Microsoft to support new Internet technologies while it provides integration and backward compatibility with bloatware such as Word and Excel — all the while incorporating more functions into its operating systems.

Microsoft's deeply entangled web of systems and application programs enables Netscape's one real set of sustainable competitive advantages: speed, relative simplicity and clear support of standards. Product bundling and the whole groupware endeavor merely get in the way. Unbundled, layered and, ultimately, component-based software is the only way for Netscape to move forward.

Fortunately — although Netscape has unnecessarily lost some time, momentum, brand clarity and customer faith — the unbundling of Navigator 4.0 and its immediate availability came before any irreparable harm was done. Partner support remains fundamentally strong because many major systems companies, telecommunications firms and Internet service providers still lean toward Netscape rather than the more menacing and ambitious Microsoft.

Who knows? Maybe this small lesson will rekindle a truly cooperative spirit. Between browsers, messaging, Internet protocols, directories, databases, Java and CORBA, those who wish to curtail Microsoft's power have all the software weaponry they need. But that holds true only if vendors look past their own narrow interests and actually work toward a common goal. In this case, Netscape has. But just barely, and just in time. □

Moschella is senior vice president of research at Computerworld, Inc. His Internet address is david_moschella@cw.com.

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Dispatches & images from the fringes of the electronic frontier

HUMAN VISION ON A SILICON CHIP

French neuroscientist Patrich Pirim says he'e invented a Generic Visual Perception Processor that reproduces several aspects of human vision on a chip. The chip takes input from a video camera and immediately identifies the presence of objects, interprets coior differencee and detarminee tha speed and direction of moving objects. Future applicatione piannad includa survaillanca cameras, robot vision and smart cars.

'NETIZENS' FAVORITE STAND-UP COMICS

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3. George Carlin
4. Tim Allen
5. Dennis Miller

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2. Rosie O'Donnell
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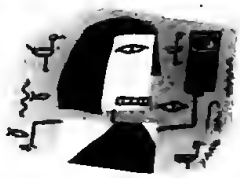

20 YEARS AGO
(SEPTEMBER 1977)

- Headline: Bubble memory prices to drop
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- Borland announces the Quattro 1.0 spreadsheet.
- John Cullinane leaves financially troubled Cullinet Software, which he founded.
- Microsoft ships Microsoft Bookshelf, its first CD-ROM application.
- Headline: MIS, telecom joust for corporate influence
- Digital introduces two MicroVAX minicomputers to compete against IBM's 9370.

Inside Lines

Barksdale not much of a communicator

Jim Barksdale, CEO of Netscape, squirmed in his chair last week during a question-and-answer session at the Java Internet Business Expo in New York. A reporter asked him point-blank about a rumor that Sun might be buying the company that has been locked in heated battle with Microsoft over its Internet Explorer browser. After Barksdale flailed in his chair for a moment and turned five shades of red, he found the breath to offer no comment.

OK, so it wasn't Lincoln/Douglas

Let other conferences pit high-level vendor executives against one another in so-called "great debates." The Data Warehousing Institute really got the fur flying last week in Boston with a panel made up of two sets of true believers: statisticians on one side and data miners on the other. Much arcane but passionate discussion ensued, with most of the warehousing managers in the audience siding with the tried-and-true statisticians over the newfangled purveyors of data mining tools. "It's a little bit like the doctors vs. the chiropractors," cracked one warehousing wag.

"I survived R/3 ... and a SAP user group meeting"

Installing SAP AG'e R/3 system may not kill you, but attending the German software maker'e user group conference could. Florida health officials sent out a warning last week about e possible outbreak of the mosquito-born disease encephalitis in Orlando, Fla., and surrounding areas. SAP's annual Sapphire conference was held there last week. There have been no reports of anyone being infected, but officials warned people to stay indoors between dusk and dawn, when mosquitoes are most active. The outbreak forced Disney and some area hoteis to close before sundown all hotel pools and water parks, where some SAP events took place. The disease causes a swelling of the brain or spinal cord, which has also been known to happen during big bang R/3 installations, but for totally unrelated reasons.

Can we chat?

Why break in to someone else'e computer system? Sometimes, just to chat, it seems. The Computer Emergency Response Team at Carnegie Mellon University said it has received "a significant number of reports" that hackers are breaking in to machines and installing Internet Relay Chat software. System administrators who find unauthorized Internet Relay Chat clients, servers or robots should check for signs of compromise, the team advised.

My E-bodyguard

Worried about where on the Internet the government might be putting data about you? In answer to that cyberfear comes, yes, "Guido, the Cyber-Bodyguard." That's how Privacy, Inc. in Aurora, Colo., touts its Internet Background Check utility, which will scan through government databases so you can see if you turn up in places such as Deadbeat Parents or Registered Sex Offenders — by mistake, of course.

Sun slates Networld/Interop server splash

Sources close to the company said Sun will announce Version 3.0 of its Internet Mail Server at Networld/Interop '97 next month in Atlanta. The Internet mail server is expected to support thousands of users per server, according to one beta tester.

Microsoft last week put out a Top 10 list, but David Letterman probably won't be asking to borrow it any time soon. Sample item? "How will Enterprise JavaBeans integrate with what customers already have and are using today?" That should have 'em rolling in the aisles, huh? No, Microsoft sounded dead serious when, on the eve of the Java Internet Business Expo, it E-mailed to reporters "Top Ten questions for Sun." And, as if that weren't enough, Microsoft also provided five questions for Sun's customers. How thoughtful of them. If you have Top 10 lists, questions or news tips, send them to news editor Patricia Keefe at (508) 820-8183 or E-mail her at patricia_keefe@cw.com.

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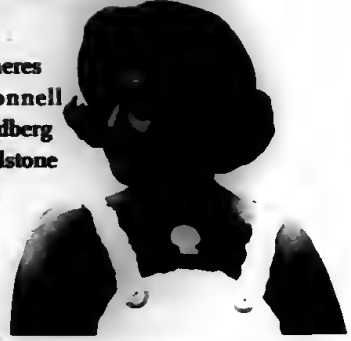

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